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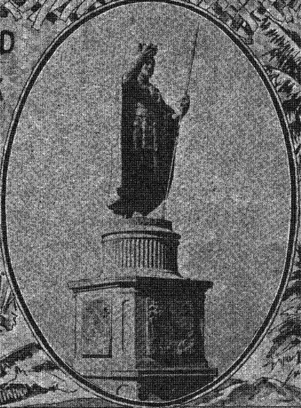
THE HAWAIIAN ANNUAL

THE
RECOGNIZED
BOOK
OF
INFORMATION
ABOUT
HAWAII

1910



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THOS. G. THRUM
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Honolulu, T. H.
THIRTY-SIXTH YEAR

Oahu Railway & Land Co.

THIS COMPANY is now running to Kahuku, 71 miles from Honolulu. The equipment of the road is first-class in every particular.

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B. F. DILLINGHAM, *General Manager*

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F. C. SMITH,
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HAWAIIAN

Almanac and Annual

FOR

1910

⁂

THE REFERENCE BOOK OF INFORMATION AND STATISTICS

RELATING TO THE TERRITORY OF HAWAII, OF VALUE TO
MERCHANTS, TOURISTS AND OTHERS

⁂

THOS. G. THRUM,
Compiler and Publisher.

Thirty-Sixth Year of Publication

Copyright 1909, by Thos. G. Thrum.

HONOLULU:
1909

Counting House
1910 Calendar 1910

	SUNDAY……	MONDAY……	TUESDAY ..	WEDNESDAY	THURSDAY…	FRIDAY ……	SATURDAY…		SUNDAY ……	MONDAY ……	TUESDAY …	WEDNESDAY	THURSDAY…	FRIDAY ……	SATURDAY…
JAN.	…	…	…	…	…	…	1	JULY	…	…	…	…	…	1	2
	2	3	4	5	6	7	8		3	4	5	6	7	8	9
	9	10	11	12	13	14	15		10	11	12	13	14	15	16
	16	17	18	19	20	21	22		17	18	19	20	21	22	23
	23	24	25	26	27	28	29		24	25	26	27	28	29	30
	30	31	…	…	…	…	…		31	…	…	…	…	…	…
FEB.	…	…	1	2	3	4	5	AUG.	…	1	2	3	4	5	6
	6	7	8	9	10	11	12		7	8	9	10	11	12	13
	13	14	15	16	17	18	19		14	15	16	17	18	19	20
	20	21	22	23	24	25	26		21	22	23	24	25	26	27
	27	28	…	…	…	…	…		28	29	30	31	…	…	…
MAR.	…	…	1	2	3	4	5	SEPT.	…	…	…	…	1	2	3
	6	7	8	9	10	11	12		4	5	6	7	8	9	10
	13	14	15	16	17	18	19		11	12	13	14	15	16	17
	20	21	22	23	24	25	26		18	19	20	21	22	23	24
	27	28	29	30	31	…	…		25	26	27	28	29	30	…
APR.	…	…	…	…	…	1	2	OCT.	…	…	…	…	…	…	1
	3	4	5	6	7	8	9		2	3	4	5	6	7	8
	10	11	12	13	14	15	16		9	10	11	12	13	14	15
	17	18	19	20	21	22	23		16	17	18	19	20	21	22
	24	25	26	27	28	29	30		23	24	25	26	27	28	29
	…	…	…	…	…	…	…		30	31	…	…	…	…	…
MAY	1	2	3	4	5	6	7	NOV.	…	…	1	2	3	4	5
	8	9	10	11	12	13	14		6	7	8	9	10	11	12
	15	16	17	18	19	20	21		13	14	15	16	17	18	19
	22	23	24	25	26	27	28		20	21	22	23	24	25	26
	29	30	31	…	…	…	…		27	28	29	30	…	…	…
JUNE	…	…	…	1	2	3	4	DEC.	…	…	…	…	1	2	3
	5	6	7	8	9	10	11		4	5	6	7	8	9	10
	12	13	14	15	16	17	18		11	12	13	14	15	16	17
	19	20	21	22	23	24	25		18	19	20	21	22	23	24
	26	27	28	29	30	…	…		25	26	27	28	29	30	31

Thos. G. Thrum's
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1063 FORT ST. HONOLULU, T. H.

Maj. Thomas M. Spaulding
gt.
9-24-1923

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HAWAIIAN ANNUAL CALENDAR FOR 1910.

Second half of the twelfth year and first half of the thirteenth year since annexation of Hawaii with the United States.

Seventeenth year since the downfall of the Monarchy.

The 132nd year since the discovery of the Hawaiian Islands by Captain Cook.

Holidays Observed at the Hawaiian Islands.

*New Year	Jan. 1
Chinese New Year	Feb. 9
*Washington's Birthday	Feb. 22
Good Friday	March 25
*Decoration Day	May 30
*Kamehameha Day	June 11
*Birthday Hawn. Republic	July 4
*American Anniversary	July 4
*Labor Day (First Monday)	Sept. 5
*Regatta Day (Third Saturday)	Sept. 17
Thanksgiving Day	Nov. 24
*Christmas Day	Dec. 25

Those distinguished by an Asterisk have been established by law.

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Church Days.

Epiphany	Jan. 6
Ash Wednesday	Feb. 9
First Sunday in Lent	Feb. 13
Good Friday	March 25
Easter Sunday	March 27
Ascension Day	May 5
Whit Sunday	May 15
Trinity Sunday	May 22
Corpus Christi	May 26
Advent Sunday	Nov. 27
Christmas	Dec. 25

Eclipses in 1910.

Prepared for the Annual by Dr. W. D. Alexander.

In the year 1910 there will be four eclipses, two of the Sun, and two of the Moon.

I. A Total Eclipse of the Sun, May 8, invisible here.

II. A Total Eclipse of the Moon, May 23, visible at Honolulu, as follows:

Moon enters shadow 5h. 15m. P. M. Honolulu time.
Total eclipse begins 6h. 37.6m. P. M. Honolulu time.
Middle of eclipse 7h. 2.9m. P. M. Honolulu time.
Total eclipse ends 7h. 28.2m. P. M. Honolulu time.
Moon leaves shadow 8h. 50.9m. P. M. Honolulu time.
First contact 84° E. of north point of Moon's limb.

III. A Partial Eclipse of the Sun, Nov. 1, visible here.
At Honolulu the eclipse will begin about 3h. 42m. P. M. and continue till sunset.

IV. A Total Eclipse of the Moon, Nov. 16, not visible at Honolulu.

FIRST QUARTER, 1910.

JANUARY.

D.		H.M.	
3	Last Quar.....	2.55	a.m.
11	New Moon....	1.20	a.m.
17	First Quar.....	11.49	p m.
25	Full Moon.....	1.19	a.m.

Day of Mo.	Day of Wk.	Sun Rises...	Sun Sets....
		H.M.	H.M
1	Sat. ..	6 37 8	5 29 6
2	SUN..	6 38 1	5 30 1
3	Mon..	6 38 4	5 30 7
4	Tues..	6 38 7	5 31 4
5	Wed..	6 38 9	5 32 1
6	Thurs.	6 39 1	5 32 8
7	Fri....	6 39 3	5 33 4
8	Sat. ..	6 39 5	5 34 1
9	SUN..	6 39 7	5 34 8
10	Mon..	6 39 9	5 35 5
11	Tues..	6 40 1	5 36 2
12	Wed..	6 40 2	5 36 9
13	Thurs.	6 40 3	5 37 5
14	Fri....	6 40 4	5 38 2
15	Sat ...	6 40 4	5 38 9
16	SUN..	6 40 4	5 39 6
17	Mon..	6 40 4	5 40 3
18	Tues..	6 40 4	5 40 9
19	Wed..	6 40 3	5 41 6
20	Thurs.	6 40 3	5 42 3
21	Fri....	6 40 2	5 43 0
22	Sat. ..	6 40 1	5 43 6
23	SUN..	6 39 9	5 44 3
24	Mon..	6 39 8	5 45 0
25	Tues..	6 39 6	5 45 6
26	Wed..	6 39 4	5 46 3
27	Thurs.	6 39 2	5 46 9
28	Fri....	6 39 0	5 47 5
29	Sat. ..	6 38 7	5 48 1
30	SUN..	6 38 4	5 48 8
31	Mon..	6 38 0	5 49 4

FEBRUARY

D.		H.M.	
2	Last Quar....	0.56	a,m.
9	New Moon....	2.42	p.m.
16	First Quar....	8.01	a.m.
23	Full Moon....	5.04	p.m.

Day of Mo.	Day of Wk.	Sun Rises...	Sun Sets....
		H,M.	H.M.
1	Tues..	6 37 7	5 50 0
2	Wed..	6 37 4	5 50 6
3	Thurs.	6 37 0	5 51 3
4	Fri....	6 36 6	5 51 9
5	Sat....	6 36 2	5 52 5
6	SUN..	6 35 7	5 53 1
7	Mon..	6 35 3	5 53 7
8	Tues..	6 34 8	5 54 2
9	Wed..	6 34 3	5 54 8
10	Thurs.	6 33 8	5 55 3
11	Fri....	6 33 2	5 55 8
12	Sat...	6 32 8	5 56 3
13	SUN.	6 32 2	5 56 8
14	Mon..	6 31 6	5 57 3
15	Tues..	6 31 0	5 57 9
16	Wed..	6 30 4	5 58 4
17	Thurs.	6 29 8	5 58 9
18	Fri....	6 29 1	5 59 4
19	Sat....	6 28 5	5 59 9
20	SUN..	6 27 8	6 0 4
21	Mon..	6 27 1	6 0 9
22	Tues..	6 26 5	6 1 3
23	Wed..	6 25 8	6 1 8
24	Thurs.	6 25 1	6 2 2
25	Fri....	6 24 3	6 2 6
26	Sat ...	6 23 5	6 3 0
27	SUN..	6 22 7	6 3 4
28	Mon..	6 21 9	6 3 8

MARCH

D.		H.M.	
3	Last Quar.....	9.21	p.m.
11	New Moon....	1.41	a.m.
17	First Quar....	5.06	p.m.
25	Full Moon....	9.49	a.m.

Day of Mo.	Day of Wk.	Sun Rises...	Sun Sets...
		H.M.	H.M.
1	Tues..	6 21 1	6 4 2
2	Wed..	6 20 3	6 4 7
3	Thurs.	6 19 5	6 5 0
4	Fri....	6 18 7	6 5 4
5	Sat. ..	6 17 9	6 5 8
6	SUN..	6 17 0	6 6 2
7	Mon..	6 16 2	6 6 6
8	Tues..	6 15 4	6 6 9
9	Wed..	6 14 5	6 7 3
10	Thurs.	6 13 7	6 7 7
11	Fri....	6 12 8	6 8 0
12	Sat. ..	6 11 9	6 8 4
13	SUN..	6 11 0	6 8 7
14	Mon..	6 10 1	6 9 0
15	Tues..	6 9 2	6 9 3
16	Wed..	6 8 3	6 9 7
17	Thurs.	6 7 4	6 10 0
18	Fri....	6 6 5	6 10 3
19	Sat. ..	6 5 6	6 10 6
20	SUN..	6 4 7	6 10 9
21	Mon..	6 3 8	6 11 2
22	Tues..	6 2 9	6 11 6
23	Wed..	6 2 0	6 11 9
24	Thurs.	6 1 1	6 12 2
25	Fri....	6 0 1	6 12 5
26	Sat. ...	5 59 2	6 12 8
27	SUN..	5 58 3	6 13 1
28	Mon..	5 57 3	6 13 4
29	Tues..	5 56 4	6 13 7
30	Wed..	5 55 5	6 14 0
31	Thurs.	5 54 6	6 14 4

We are pleased to be corrected in the statement made in last Annual, page 42, that the Leilehua heiau (unnamed), had been "recently destroyed and its stones used in the Wahiawa dam." Officers of the recently established Schofield Barracks in that vicinity report what is probably the old temple in question as being situated on the top of a knoll on the northern side of the Pulee gulch, and is described as about 40x75 feet in size, of a pyramidal platform type and in a good state of preservation but minus its sacrificial stone.

SECOND QUARTER, 1910.

APRIL

D.		H. M.	
2	Last Quar... ...	2,16	p.m.
9	New Moon....	10.54	a.m.
16	First Quar......	3.33	a.m.
24	Full Moon	2.51	a.m

Day of Mo.	Day of Wk.	Sun Rises...	Sun Sets...
		H.M.	H.M.
1	Fri....	5 53 7	6 14 7
2	Sat. ..	5 52 8	6 15 0
3	SUN..	5 51 9	6 15 3
4	Mon..	5 51 0	6 15 6
5	Tues..	5 50 1	6 16 0
6	Wed..	5 49 2	6 16 3
7	Thurs.	5 48 3	6 16 6
8	Fri....	5 47 4	6 16 9
9	Sat. ..	5 46 5	6 17 2
10	SUN..	5 45 6	6 17 5
11	Mon.	5 44 8	6 17 8
12	Tues..	5 44 0	6 18 1
13	Wed..	5 43 2	6 18 4
14	Thurs.	5 42 3	6 18 8
15	Fri...	5 41 5	6 19 1
16	Sat. .	5 40 7	6 19 4
17	SUN..	5 39 9	6 19 8
18	Mon..	5 39 0	6 20 1
19	Tues..	5 38 2	6 20 5
20	Wed..	5 37 4	6 20 8
21	Thurs.	5 36 6	6 21 2
22	Fri....	5 35 8	6 21 5
23	Sat. ..	5 35 0	6 21 9
24	SUN..	5 34 3	6 22 3
25	Mon..	5 33 6	6 22 6
26	Tues..	5 32 9	6 23 0
27	Wed..	5 32 2	6 23 3
28	Thurs.	5 31 4	6 23 7
29	Fri....	5 30 8	6 24 1
30	Sat. ..	5 30 1	6 24 5

MAY

D.		H.M.	
2	Last Quar......	2.58	a.m.
8	New Moon......	7.02	p.m.
15	First Quar.....	3.42	p.m.
23	Full Moon......	6.08	p.m
31	Last Quar....	11.53	a.m.

Day of Mo.	Day of Wk.	Sun Rises...	Sun Sets...
		H.M.	H.M.
1	SUN..	5 29 5	6 24 9
2	Mon..	5 28 8	6 25 2
3	Tues..	5 28 2	6 25 6
4	Wed..	5 27 6	6 26 0
5	Thurs.	5 27 0	6 26 4
6	Fri....	5 26 4	6 26 8
7	Sat. ..	5 25 8	6 27 2
8	SUN..	5 25 3	6 27 6
9	Mon..	5 24 7	6 28 0
10	Tues..	5 24 3	6 28 5
11	Wed..	5 23 8	6 28 9
12	Thurs.	5 23 4	6 29 3
13	Fri.. .	5 22 9	6 29 8
14	Sat. ..	5 22 4	6 30 2
15	SUN..	5 22 0	6 30 6
16	Mon..	5 21 6	6 31 0
17	Tues..	5 21 2	6 31 4
18	Wed..	5 20 8	6 31 9
19	Thurs.	5 20 5	6 32 3
20	Fri....	5 20 2	6 32 7
21	Sat. ..	5 19 8	6 33 1
22	SUN..	5 19 5	6 33 6
23	Mon..	5 19 2	6 34 0
24	Tues..	5 18 8	6 34 5
25	Wed..	5 18 5	6 34 9
26	Thurs.	5 18 3	6 35 4
27	Fri....	5 18 1	6 35 8
28	Sat. ..	5 17 9	6 36 2
29	SUN.	5 17 7	6 36 6
30	Mon..	5 17 5	6 37 0
31	Tues..	5 17 4	6 37 4

JUNE

D.		H.M.	
7	New Moon......	2.40	a.m.
14	First Quar......	5.48	a.m.
22	Full Moon	9.41	a.m.
29	Last Quar	6 08	p.m.

Day of Mo.	Day of Wk.	Sun Rises...	Sun Sets...
		H.M	H.M.
1	Wed..	5 17 3	6 37 8
2	Thurs.	5 17 2	6 38 2
3	Fri....	5 17 1	6 38 6
4	Sat. ..	5 17 1	6 39 0
5	SUN..	5 17 0	6 39 4
6	Mon..	5 17 0	6 39 8
7	Tues.	5 17 0	6 40 1
8	Wed..	5 17 0	6 40 5
9	Thurs.	5 16 9	6 40 9
10	Fri....	5 16 9	6 41 2
11	Sat. ..	5 17 0	6 41 5
12	SUN..	5 17 1	6 41 9
13	Mon..	5 17 2	6 42 2
14	Tues..	5 17 3	6 42 5
15	Wed..	5 17 5	6 42 8
16	Thurs.	5 17 6	6 43 1
17	Fri....	5 17 7	6 43 4
18	Sat...	5 18 9	6 43 6
19	SUN..	5 18 0	6 43 9
20	Mon..	5 18 2	6 44 1
21	Tues..	5 18 4	6 44 4
22	Wed..	5 18 6	6 44 6
23	Thurs.	5 19 8	6 44 7
24	Fri....	5 19 1	6 44 9
25	Sat...	5 19 4	6 45 1
26	SUN..	5 19 6	6 45 2
27	Mon..	5 19 9	6 45 4
28	Tues..	5 20 2	6 45 5
29	Wed..	5 20 5	6 45 6
30	Thurs.	5 20 8	6 45 7

Mr. J. F. G. Stokes of the Bishop Museum staff has placed the fortunate possessors of Fornander's "Polynesian Race" under lasting obligations for his painstaking index to its three volumes. This index issued from the Museum Press the early part of last summer. Its convenience materially enhances the value of Judge Fornander's life work which, unfortunately, has for some time past been classed as "out of print."

THIRD QUARTER, 1910.

JULY				AUGUST				SEPTEMBER			
D.		H.M.		D.		H.M.		D.		H.M.	
6	New Moon....	10.49	a.m.	4	New Moon.....	8.05	p.m.	3	New Moon......	7.34	a.m.
13	First Quar....	9.53	p.m.	12	First Quar.....	3.30	p.m.	11	First Quar.....	9.39	a.m.
21	Full Qoon....	10.06	p.m.	20	Full Moon.....	8.43	a.m.	18	Full Moon.....	6.21	p.m.
28	Last Quar.....	11.03	p.m.	27	Last Quar.....	4.02	p.m.	25	Last Quar.....	10.22	a.m.

Day of Mo.	Day of Wk.	Sun Rises...	Sun Sets...	Day of Mo.	Day of Wk.	Sun Rises...	Sun Sets...	Day of No.	Day of Wk.	Sun Rises...	Sun Sets...
		H.M.	H.M.			H.M.	H.M.			H.M.	H.M.
1	Fri....	5 21 1	6 45 8	1	Mon..	5 32 9	6 39 0	1	Thurs.	5 43 2	6 16 6
2	Sat. ..	5 21 4	6 45 8	2	Tues..	5 33 0	6 38 5	2	Fri....	5 43 4	6 15 7
3	SUN..	5 21 7	6 45 8	3	Wed..	5 33 7	6 38 0	3	Sat. ..	5 43 7	6 14 8
4	Mon..	5 22 1	6 45 9	4	Thurs.	5 34 1	6 37 4	4	SUN..	5 43 9	6 13 9
5	Tues..	5 22 4	6 45 8	5	Fri....	5 34 4	6 36 9	5	Mon..	5 44 2	6 13 0
6	Wed..	5 22 8	6 45 8	6	Sat. ..	5 34 8	6 36 3	6	Tues..	5 44 5	6 12 0
7	Thurs.	5 23 1	6 45 8	7	SUN..	5 35 2	6 35 7	7	Wed..	5 44 7	6 11 1
8	Fri....	5 23 5	6 45 8	8	Mon..	5 35 6	6 35 7	8	Thurs.	5 45 0	6 10 2
9	Sat ...	5 23 8	6 45 7	9	Tues..	5 35 9	6 34 5	9	Fri....	5 45 3	6 9 2
10	SUN..	5 24 2	6 45 6	10	Wed..	5 36 3	6 33 8	10	Sat. ..	5 45 5	6 8 3
11	Mon..	5 24 5	6 45 5	11	Thurs.	5 36 6	6 33 2	11	SUN..	5 45 8	6 7 3
12	Tues..	5 24 9	6 45 4	12	Fri....	5 37 0	6 32 5	12	Mon..	5 46 0	6 6 4
13	Wed.	5 25 4	6 45 3	13	Sat, ..	5 37 3	6 31 8	13	Tues..	5 46 3	6 5 4
14	Thurs.	5 25 8	6 45 1	14	SUN..	5 37 7	6 31 1	14	Wed..	5 46 5	6 4 4
15	Fri....	5 26 2	6 44 9	15	Mon..	5 38 0	6 30 4	15	Thurs.	5 46 8	6 3 5
16	Sat. ..	5 26 6	6 44 7	16	Tues..	5 38 3	6 29 7	16	Fri...	5 47 0	6 2 5
17	SUN..	5 27 0	6 44 5	17	Wed..	5 38 7	6 29 0	17	Sat. ..	5 47 3	6 1 6
18	Mon..	5 27 4	6 44 3	18	Thurs.	5 39 0	6 28 2	18	SUN..	5 47 5	6 0 6
19	Tues..	5 27 8	6 44 1	19	Fri....	5 39 3	6 27 5	19	Mon..	5 47 8	5 59 7
20	Wed..	5 28 2	6 43 8	20	Sat. ..	5 39 6	6 26 7	20	Tues..	5 48 0	5 58 7
21	Thurs.	5 28 6	6 43 5	21	SUN..	5 39 9	6 25 9	21	Wed..	5 48 3	5 57 8
22	Fri....	5 29 0	6 43 2	22	Mon..	5 40 3	6 25 1	22	Thurs.	5 48 5	5 56 8
23	Sat. ..	5 29 4	6 42 8	23	Tues..	5 40 6	6 24 3	23	Fri....	5 48 8	5 55 9
24	SUN..	5 29 8	6 42 5	24	Wed..	5 40 9	6 23 5	24	Sat. ..	5 49 0	5 54 9
25	Mon..	5 30 2	6 42 1	25	Thurs.	5 41 2	6 22 6	25	SUN..	5 49 3	5 53 9
26	Tues..	5 30 6	6 41 7	26	Fri....	5 41 4	6 21 8	26	Mon..	5 49 6	5 53 0
27	Wed..	5 31 0	6 41 3	27	Sat. ..	5 41 7	6 20 9	27	Tues..	5 49 8	5 52 1
28	Thurs.	5 31 4	6 40 9	28	SUN..	5 42 0	6 20 1	28	Wed..	5 50 1	5 51 1
29	Fri....	5 31 8	6 40 5	29	Mon..	5 42 3	6 19 2	29	Thurs.	5 50 4	5 50 2
30	Sat. ..	5 32 2	6 40 0	30	Tues..	5 42 6	6 18 3	30	Fri....	5 50 7	5 49 2
31	SUN..	5 32 5	6 39 5	31	Wed..	5 42 9	6 17 4				

Enquiry is made relative to the introduction of the English sparrow into these islands. The first mention so far found of sparrows show the receipt of four by the Agricultural Society in May, 1859, as also "a further supply of linnets, per *Felix*, from San Francisco, procured by Rev. Mr. Walsworth of Marysville, Cal." In July, 1871, nine out of a lot of twelve English sparrows were received by J. A. Hassinger, from New Zealand, per *Nevada,* and when sufficiently recuperated were set at liberty.

FOURTH QUARTER, 1910.

OCTOBER				NOVEMBER				DECEMBER			
D.		H.M.		D.		H.M.		D.		H.M.	
2	New Moon....	10.01	p.m.	1	New Moon....	3.25	p.m.	1	New Moon....	10.39	a.m.
11	First Quar....	3.09	a.m.	9	First Quar....	6.58	p.m.	9	First Quar....	8.34	a.m.
18	Full Moon....	3.53	a.m.	16	Full Moon....	1.54	p.m.	16	Full Moon....	0.34	a.m.
24	Last Quar....	7.17	p.m.	23	Last Quar....	7.42	a.m.	23	Last Quar....	0.04	a.m.
								31	New Moon..	5.50	a.m.

Day of Mo.	Day of Wk.	Sun Rises..	Sun Sets...	Day of Mo.	Day of Wk.	Sun Rises..	Sun Sets...	Day of Mo.	Day of Wk.	Sun Rises..	Sun Sets...
		H.M.	H.M.			H M.	H.M.			H.M.	H.M.
1	Sat ..	5 51 0	5 48 3	1	Tues..	6 2 8	5 24 4	1	Thurs.	6 20 9	5 17 2
2	SUN..	5 51 3	5 47 4	2	Wed...	6 3 3	5 23 9	2	Fri....	6 21 5	5 17 3
3	Mon..	5 51 6	5 46 5	3	Thurs.	6 3 8	5 23 3	3	Sat...	6 22 2	5 17 4
4	Tues..	5 51 8	5 45 6	4	Fri ...	6 4 3	5 22 8	4	SUN..	6 22 8	5 17 5
5	Wed..	5 52 1	5 44 7	5	Sat...	6 4 9	5 22 4	5	Mon.	6 23 5	5 17 7
6	Thurs.	5 52 4	5 43 8	6	SUN.	6 5 4	5 21 9	6	Tues..	6 24 2	5 17 9
7	Fri....	5 52 7	5 42 9	7	Mon..	6 6 0	5 21 4	7	Wed..	6 24 8	5 18 1
8	Sat ...	5 53 1	5 42 0	8	Tues..	6 6 5	5 21 0	8	Thurs.	6 25 4	5 18 4
9	SUN..	5 53 4	5 41 1	9	Wed.	6 7 1	5 20 7	9	Fri....	6 26 0	5 18 7
10	Mon..	5 53 8	5 40 2	10	Thurs.	6 7 6	5 20 2	10	Sat...	6 26 6	5 19 0
11	Tues..	5 54 1	5 39 4	11	Fri ...	6 8 2	5 19 9	11	SUN..	6 27 3	5 19 3
12	Wed..	5 54 5	5 38 6	12	Sat ...	6 8 9	5 19 5	12	Mon..	6 27 9	5 19 6
13	Thurs.	5 54 8	5 37 7	13	SUN..	6 9 5	5 19 2	13	Tues..	6 28 5	5 19 9
14	Fri.,..	5 55 1	5 36 9	14	Mon..	6 10 1	5 18 9	14	Wed.	6 29 1	5 20 3
15	Sat. ..	5 55 5	5 36 1	15	Tues..	6 10 7	5 18 6	15	Thurs.	6 29 7	5 20 6
16	SUN..	5 55 8	5 35 3	16	Wed..	6 11 3	5 18 3	16	Fri ...	6 30 3	5 21 0
17	Mon...	5 56 2	5 34 5	17	Thurs.	6 11 9	5 18 0	17	Sat...	6 30 8	5 21 4
18	Tues..	5 56 6	5 33 7	18	Fri ..	6 12 5	5 17 8	18	SUN..	6 31 4	5 21 9
19	Wed..	5 56 9	5 32 9	19	Sat. ..	6 13 1	5 17 6	19	Mon..	6 31 9	5 22 3
20	Thurs.	5 57 3	5 32 2	20	SUN..	6 13 7	5 17 4	20	Tues..	6 32 5	5 22 8
21	Fri....	5 57 7	5 31 4	21	Mon..	6 14 3	5 17 2	21	Wed..	6 33 0	5 23 3
22	Sat. ..	5 58 2	5 30 7	22	Tues..	6 15 0	5 17 1	22	Thurs.	6 33 5	5 23 8
23	SUN..	5 58 6	5 30 0	23	Wed..	6 15 7	5 17 1	23	Fri ...	6 34 0	5 24 3
24	Ton ..	5 59 1	5 29 3	24	Thurs.	6 16 3	5 17 0	24	Sat...	6 34 5	5 24 8
25	Tues..	5 59 5	5 28 7	25	Fri ...	6 17 0	5 17 0	25	SUN..	6 35 0	5 25 3
26	Wed...	6 0 0	5 28 0	26	Sat ...	6 17 6	5 17 0	26	Mon..	6 35 5	5 25 9
27	Thurs.	6 0 4	5 27 4	27	SUN..	6 18 2	5 17 0	27	Tues...	6 35 9	5 26 5
28	Fri....	6 0 9	5 26 7	28	Mon..	6 18 9	5 17 0	28	Wed..	6 36 3	5 27 0
29	Sat. ..	6 1 4	5 26 1	29	Tues...	6 19 6	5 17 1	29	Thurs.	6 36 6	5 27 6
30	SUN..	6 1 8	5 25 5	30	Wed..	6 20 2	5 17 1	30	Fri ...	6 37 0	5 28 2
31	Mon..	6 2 3	5 24 9					31	Sat...	6 37 3	5 28 8

Keep a file of the HAWAIIAN ANNUAL. It is valuable for reference. Several of the earlier issues long out of print render it difficult now to fill orders for complete sets. Two full sets changed hands this past year at over $50.00 each.

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INTER-ISLAND DISTANCES BY SEA IN SEA MILES.

AROUND OAHU FROM HONOLULU—ESPLANADE WHARF TO

	Miles.		Miles.
Bell Buoy	1¼	Pearl River Bar	6
Diamond Head	5	Barber's Point	15
Koko Head	12	Waianae Anchorage	26
Makapuu Point	16	Kaena Point, N. W. of Oahu	36
Mokapu	27	Waialua Anchorage	46
Kahuku North Point	48	Kahuku N. Pt., Oahu, via Kaena	58

HONOLULU TO

Lae o ka Laau, S. W. Pt. Molokai	35	Kawaihae, Hawaii	144
Kalaupapa, Leper Settlement	52	Kealakekua, " (direct)	157
West Point of Lanai	50	" " (via Kawaihae)	186
Lahaina, Maui	72	S. W. Pt. Hawaii " "	233
Kahului, "	90	Punaluu, "	250
Hana, "	128	Hilo, " (direct)	192
Maalaea, "	86	" " (windward)	206
Makena, "	96	" " (via Kawaihae)	230
Mahukona, Hawaii	134		

HONOLULU TO

Nawiliwili, Kauai	98	Hanalei, Kauai	125
Koloa, "	102	Niihau	144
Waimea, "	120		

LAHAINA, MAUI, TO

Kaluaaha, Molokai	17	Maalaea, Maui	12
Lanai	9	Makena, Maui	18

KAWAIHAE, HAWAII, TO

Mahukona, Hawaii	10	Hilo, Hawaii	85
Waipio, Hawaii	37	Lae o ka Mano, Hawaii	20
Honokaa, Hawaii	45	Kailua, Hawaii	34
Laupahoehoe, Hawaii	62	Kealakekua, Hawaii	44

HILO, HAWAII, TO

East Point of Hawaii	20	Punaluu, Hawaii	70
Keauhou, Kau, Hawaii	50	Kaalualu, Hawaii	80
North Point of Hawaii	62	South Point of Hawaii	85

WIDTH OF CHANNELS.

Oahu and Molokai	23	Maui and Lanai	7
Diamond Head to S. W. Point of Molokai	30	Maui and Kahoolawe	6
Molokai and Lanai	7	Hawaii and Maui	26
Molokai and Maui	8	Kauai and Oahu	63
		Niihau and Kauai	15

OCEAN DISTANCES.

HONOLULU TO

San Francisco	2100	Auckland	3810
San Diego	2260	Sydney	4410
Portland, Or.	2360	Hongkong	4920
Brito, Nicaragua	4200	Yokohama	3400
Panama	4720	Guam	3300
Tahiti	2440	Manila, via N. E. Cape	4890
Samoa	2290	Victoria, B. C.	2460
Fiji	2700	Midway Islands	1200

OVERLAND DISTANCES.

Revised for the Annual in accordance with latest Government Survey measurements. The outer column of figures indicates the distance between points

ISLAND OF OAHU.

HONOLULU POST-OFFICE TO

	Miles.
Bishop's corner (Waikiki)	3.2
Waikiki Villa	3.6
Race Course	4.5
Diamond Head	5.9
Kaalawai	6.0

	Miles.	Inter.
Thomas Square	1.0	
Pawaa corners	2.0	1.0
Kamoiliili	3.3	1.3
Telegraph Hill	5.0	1.7
Waialae	6.2	1.2
Niu	8.8	2.6
Koko Head	11.8	3.0
Makapuu	14.8	3.0
Waimanalo	20.8	6.0
Waimanalo, via Pali	12.0	

	Miles.	Inter.
Nuuanu Bridge	1.1	
Mausoleum	1.5	0.4
Electric Reservoir	2.7	1.2
Luakaha	4.3	1.6
Nuuanu Dam	5.0	0.7
Pali	6.6	1.6
Kaneohe	11.9	5.7
Waiahole	18.9	7.0
Kualoa	21.9	3.0

	Miles.	Inter.
Kahana	26.4	4.5
Punaluu	28.4	2.0
Hauula	31.4	3.0
Laie	34.4	3.0
Kahuku Mill	37.2	2.8
Kahuku Ranch	40.0	2.8

	Miles.	Inter.
Moanalua	3.4	
Kalauao	7.4	4.0
Ewa Church	10.2	2.8
Kipapa	13.6	3.4
Kaukonahua	20.0	6.4
Leilehua	20.0	
Waialua	28.0	8.0
Waimea	32.4	4.4
Kahuku Ranch	39.4	7.0

	Miles.	Inter.
Ewa Church	10.2	
Waipio (Brown's)	11.2	1.0
Hoaeae (Robinson's)	13.5	2.3
Barber's Point, L. H.	21.5	8.0
Nanakuli	23.5	2.0
Waianae Plantation	29.9	6.4
Kahanahaiki	36.9	7.0
Kaena Point	42.0	5.1
Waialua to Kaena Pt.	12.0	

OAHU RAILWAY: DISTANCES FROM HONOLULU DEPOT TO

	Miles.
Moanalua	2.76
Puuloa	6.23
Halawa	8.14
Aiea	9.37
Kalauao	10.20
Waiau	10.93
Pearl City	11.76
Waiawa	12.52
Wahiawa Station	25.20
Waipio	13.58
Waikele	14.57
Hoaeae	15.23
Ewa Plantation Mill	18.25
Waianae Station	33.30
Kaena Point	44.50
Waialua Station	55.80
Kahuku Plantation	69.50
Punaluu	80.50

ISLAND OF KAUAI.

NAWILIWILI TO

	Miles.	Inter.
Koloa	11.0	
Lawai	13.8	2.8
Hanapepe	20.0	6.2
Waimea	27.1	7.1
Waiawa	31.5	4.4
Nuololo	44.8	13.3
Hanamaulu	3.3	

	Miles.	Inter.
Wailua River	7.7	4.4
Kealia	11.9	4.2
Anahola	15.7	3.8
Kilauea	23.6	7.9
Kalihiwai	26.6	3.0
Hanalei	31.8	5.2
Wainiha	34.8	3.0
Nuololo (no road)	47.0	12.2

ISLAND OF MAUI.

Shortest Distances by Main Road, Corrected by Hugh Howell, County Engineer.

KAHULUI TO

	Miles.	Inter.
Spreckelsville	4.0	..
Paia P. O.	7.2	3.2
Hamakuapoko Mill	9.2	2.0
Haiku P. O.	11.0	1.8
Halehaku	17.2	6.2
Huelo School	20.2	3.0
Keanae P. O.	35.5	15.3
Nahiku Landing	49.9	14.4
Ulaino School	49.2	.7
Hana P. O.	55.6	6.4
Hamoa	58.2	2.6
Wailua	62.6	4.4
Kipahulu Mill	66.2	3.6
Mokulau	71.8	5.6
Nuu	77.0	5.2
Wailuku	3.8	..
Waikapu	5.9	2.1
Maalaea	10.3	4.4
Kihei	12.6	2.3
Kalepolepo	13.9	1.3
Ulupalakua	23.6	9.7
Kanaio	26.8	3.2
Pico's	33.8	7.0
Nuu	40.6	6.8

	Miles.	Inter.
Paia P. O.	7.2	..
Makawao Court House	11.6	4.4
Olinda	18.5	6.9
Haleakala, edge Crater	26.6	8.1
Haleakala Summit	28.6	2.0
Maalaea	10.3	..
End of Mountain Road	15.8	5.5
Olowalu	19.9	4.1
Lahaina Court House	25.5	5.6
Waiehu	6.4	..
Waihee	7.3	0.9
Kahakuloa	16.3	9.0
Honokohau	23.0	6.7
Honolua	27.0	4.0
Napili	29.8	2.8
Honokawai	33.5	3.7
Lahaina Court House	39.0	5.5

MAKENA TO

	Miles.	Inter.
Ulupalakua	3.5	..
Kamaole	7.3	3.8
Waiakoa	13.0	5.7
Makawao P. O.	20.8	7.8
Makawao Court House	23.0	2.2

ISLAND OF HAWAII.

WAIMEA COURT HOUSE TO

	Miles.	Inter.
Hamakua boundary	4.5	
Kukuihaele Mill	11.0	6.5
Mana	7.7	
Hanaipoe	15.0	7.3
Keanakolu	24.0	9.0
Puakala	34.0	10.0
Laumaia	36.5	2.5
Auwaiakekua	12.5	
Humuulu Sheep Station	29.0	16.5
Via Laumaia	47.5	

	Miles.	Inter.
Hilo, via Humuula St'n.	54.0	25.0
Keamuku Sheep St'n.	14.0	
Napuu	22.0	8.0
Keawewai	8.0	
Waika	11.0	3.0
Kahuwa	13.0	2.0
Puuhue	17.0	4.0
Kohala Court House	22.0	5.0
Mahukona	22.0	
Puako	12.0	

NORTH KOHALA.—FOREIGN CHURCH, KOHALA, TO

	Miles.
Edge of Pololu Gulch	4.00
Niulii Mill	2.80
Halawa Mill	1.65
Hapuu Landing	2.15
Kohala Mill	.50
Kohala Mill Landing	1.50
Native Church	1.00

	Miles.
Union Mill	2.25
Union Mill R. R. Station	3.25
Honomakau	2.55
Hind's, Hawi	3.25
Hawi R. R. Station	4.25
Honoipu	7.25
Mahukona	10.50
Puuhue Ranch	7.25

NORTH KOHALA.—ON MAIN ROAD, MAHUKONA TO

	Miles.	Inter.		Miles.	Inter.
Hind's Mill	7.0		Wight's Corner	11.5	1.1
Union Mill Corner	8.0	1.0	Niulii Corner	12.8	1.3
Court House	9.2	1.2	Pololu Edge of Gulch	14.5	1.7
Bond's Corner	9.7	0.5	Puu Hue	5.0	
Kohala Mill Corner	10.4	0.7			

SOUTH KOHALA.—KAWAIHAE TO

	Miles.	Inter.		Miles.
Puu Ainako	4.4		Mana, Parker's	19.5
Puuiki	7.7	3.3	Keawewai	6.0
Waiaka, Catholic Church	9.5	1.8	Puuhue Ranch	10.0
Puuopelu, Parker's	10.8	1.3	Kohala Court House	15.0
Waimea Court House	11.8	1.0	Mahukona	11.0
Waimea Church	12.2	0.4	Napuu	20.0
Kukuihaele Church	22.1	9.9	Puako	5.0

KONA. KEALAKEKUA TO

Keauhou	6.0		Kawaihae	42.0	4.6
Holualoa	9.6	3.6	Honaunau	4.0	
Kailua	12.0	2.4	Hookena	7.7	3.7
Kaloko	16.0	4.0	Olelomoana	15.2	7.5
Makalawena	19.6	3.6	Hoopuloa	21.6	6.4
Kiholo	27.6	8.0	Boundary of Kau	24.8	3.2
Ke Au a Lono bound'ry	31.6	4.0	Flow of '87	32.0	7.2
Puako	37.4	5.8	Kahuku Ranch	36.5	4.5

KAU.—VOLCANO HOUSE TO

Half-way House	13.0		Honuapo	32.6	5.0
Kapapala	18.0	5.0	Naalehu	35.6	3.0
Pahala	23.0	5.0	Waiohinu	37.1	1.5
Punaluu	27.6	4.6	Kahuku Ranch	43.1	6.0

PUNA.—HILO COURT HOUSE TO

(By new road.)

	Miles.		Miles.
Keaau, Forks of Road	9.0	Kaimu	32.0
Pahoa	20.0	Kalapana	33.0
Pohoiki	28.0	Keauhou	50.0
Kapoho (Lyman's)	32.0	Panau	40.0
Opihikao	31.0	Volcano House via Panau	56.0
Kamaili	26.0	Sand Hills, Naawale, old road	18.5
Kamaili Beach	29.0	Kapoho, old road	22.0

TO VOLCANO.—HILO TO

Shipman's	1.7	Mountain View	16.8
Edge of Woods	4.1	Mason's	17.5
Cocoanut Grove	8.0	Hitchcock's	23.5
Branch Road to Puna	9.0	Cattle Pen	24.7
Furneaux's	13.2	Volcano House	31.0

THROUGH HILO DISTRICT TO

Honolii Bridge	2.5	Honohina Church	17.8
Papaikou Office	4.7	Waikaumalo Bridge	18.8
Onomea Church	6.9	Pohakupuka Bridge	21.0
Kaupakuea Cross Road	10.7	Maulua Gulch	22.0
Kolekole Bridge	14.3	Kaiwilahilahi Bridge	24.0
Hakalau, east edge gulch	15.0	Lydgate's House	26.1
Umauma Bridge	16.0	Laupahoehoe Church	26.7

THROUGH HAMAKUA.—LAUPAHOEHOE CHURCH TO

	Miles.
Bottom Kawalii Gulch	2.0
Ookala, Manager's House	4.0
Kealakaha Gulch	6.0
Kukaiau Gulch	8.0
Horner's	8.5
Catholic Church, Kainehe	9.0
Notley's, Paauilo	10.5
Kaumoalii Bridge	12.5
Bottom Kalopa Gulch	14.0
Wm. Horner's, Paauhau	15.2
Paauhau Church	16.3
Holmes' Store, Honokaa	18.0
Honokaia Church	20.5
Kuaikalua Gulch	22.0
Kapulena Church	23.9
Waipanihua	24.3
Stream at Kukuihaele	26.0
Edge Waipio	26.5
Bottom Waipio	27.0
Waimanu (approximate)	32.5
Kukuihaele to Waimea (approximate)	10.5
Gov't. Road to Hamakua Mill	1.5
Gov't. Road to Paauhau Mill	1.0
Gov't. Road to Pacific Sugar Mill, Kukuihaele	0.7

ISLAND OF MOLOKAI.

KAUNAKAKAI TO

Meyer's, Kalae	5.0
Kalaupapa	9.0
Kamalo	9.0
Kaluaaha	13.5
Pukoo	15.0
Halawa	25.0
Ka Lae o ka Laau	19.0

TABLE OF ELEVATIONS OF PRINCIPAL LOCALITIES THROUGHOUT THE ISLANDS.

(From Government Survey Records; Measurements from mean Sea Level.)

OAHU PEAKS.

	Feet.
Kaala, Waianae Range	4030
Palikea, Waianae Range	3111
Konahuanui Peak, S. of Pali	3105
Lanihuli Peak, N. of Pali	2781
Tantalus or Puu Ohia	2013
Awawaloa (Olympus), Manoa	2447
Round Top or Ualakaa	1049
Punchbowl Hill or Puowaina	498
Diamond Head or Leahi	761
Kaimuki Hill	291
Koko Head, higher crater	1205
Koko Head, lower crater	644
Makapuu, east point of island	665
Mokapu, crater off Kaneohe	681
Olomana, sharp peak, Kailua	1645
Maelieli, sharp peak, Heeia	715
Ohulehule, sharp peak, Hakipuu	2263
Koolau Range, above Wahiawa	2381

LOCALITIES NEAR HONOLULU.

Nuuanu Road, cor. School St	40
" " second bridge	77
" " cor. Judd St	137
" " Cemetery gate	162
" " Mau's'l'm gate	206
" " Schaefer's gate	238
Nuuanu Road, Queen Emma's	358
" " cor. above Electric Light Works	429
Nuuanu Road, large bridge	735
" " Luakaha gate	848
" " Pali, old station	1214

MOLOKAI, ETC.

Kamakou Peak	4958
Oloku Peak	4600
Kaunuohua	4535
Kalapamoa	4004
Puu Kolekole	3951
Kaulahuki	3749
Kaapahu Station	3563
Kaolewa Pali, o'vlkng. Settlmnt.	2100
Meyer's, Kalae	1485
Mauna Loa, near Kaunakakai	1382
Kualapuu Hill	1018
Kahoolawe (Moaula Hill)	1472
Molokini	160
Lanai	3400

HAWAII.

	Feet.		Feet.
Mauna Kea	13,825	Hiilawe Falls	1700
Mauna Loa	13,675	Parker's, Mana	3505
Hualalai	8275	Honokaa Store	1100
Kohala Mountains	5489	Kaluamakani, Hamakua	7584
Kilauea Vol. House, by leveling	3971	Lower edge forest, Hamakua	1700
Kulani, near Kilauea	5574	Lower edge forest, Hilo	1200
Kalaihea	6660	Laupahoehoe Pali	385
Aahuwela, near Laumaia	7747	Kauku Hill	1964
Hitchcock's, Puakala	6325	Puu Alala	762
Ahumo'a	7034	Halai Hill	347
Waimea Court House	2669	Puu o Nale, Kohala	1797
Waipio Pali, in Mountain	3000	B. D. Bond's, Kohala	521
Waipio Pali, on S (Road)	900	Episcopal Church, Kainaliu	1578
Waipio Pali, on N. side	1394	Puu Enuhe, Kau	2327
Waimanu, at sea	1600	Puu Hoomaha, Kau	6636
Waimanu, in mountain	4000	Puu ka Pele, Kau	5768
Waiau Lake, Mauna Kea	13,041	Pohaku Hanalei, Kau	12,310
Poliahu, Mauna Kea	13,646	Kapoho Hill, Puna	432
Kalaieha, N. Hilo	6738	Kaliu Hill, Puna	1065
Pohaku Hanalei, Humuula	7343	Olaa Trig. Station	622

MAUI.

Haleakala (Red Hill)	10,032	Puu Kapuai, Hamakua	1150
Mt. Kukui, West Maui	5790	Puu o Umi, Haiku	629
Piiholo, Makawao	2256	Puu Pane, Kula	2568
Puu Olai (Miller's Hill)	355	Lahainaluna Seminary	600
Puu Io, near Ulupalakua	2841	Kauiki, Hana	392
Ulupalakua, about	1800	"Sunnyside" Makawao	930
Olinda, Makawao	4043	Paia Foreign Church, about	850
Puu Pane, Kahikinui	3988	Eka, crater in Waihee	4500
Puu Nianiau, Makawao	6850	Keakaamanu, Hana	1250

KAUAI

Haupu	2030	Mt. Waialeale, central peak	5250
Kilohana, about	1100	Namolokama	4200

NOTE—A large number of approximate elevations of stations where rain records are kept may be found in the Rain Tables in this Annual.

Area, Elevation and Population of the Hawaiian Islands.

(As revised by latest Government Survey Records.)

Islands.	Area in Statute Square Miles.	Acres.	Height in Feet.	Population in 1900.
Hawaii	4,015	2,570,000	13,825	46,843
Maui	728	466,000	10,032	24,797
Oahu	598	384,000	4,030	58,504
Kauai	547	348,000	5,250	20,562
Molokai	261	167,000	4,958	2,504
Lanai	139	86,000	3,400	619
Niihau	97	62,000	1,300	172
Kahoolawe	69	44,000	1,472	......

Total area of Hawaiian Islands, 6,449 miles.

The outlying islets on the N. W. may amount to 6 square miles.

KILAUEA, ISLAND OF HAWAII.

Corrected for Deflection of the Vertical.

Area, 4.14 square miles, or 2,650 acres.
Circumference, 41,500 feet, or 7.85 miles.
Extreme width, 10,300 feet, or 1.95 miles.
Extreme Length, 15,500 feet, or 2.93 miles.
Elevation, Volcano House, 4,000 feet.

MOKUAWEOWEO.

The Summit Crater of Mauna Loa, Island of Hawaii.

Area, 3.70 square miles, or 2,370 acres.
Circumference, 50,000 feet, or 9.47 miles.
Length, 19,500 feet, or 3.7 miles.
Width, 9,200 feet, or 1.74 miles. Elevation of summit, 13,675 feet.

HALEAKALA, MAUI.

The great Crater of Maui, the largest in the world.

Area, 19 square miles, or 12,160 acres.
Circumference, 105,600 feet, or 20 miles.
Extreme Length, 39,500 feet, or 7.48 miles.
Extreme width, 12,500 feet, or 2.37 miles.
Elevation to summit, 10,032 feet.
Elevation of principal cones in crater, 8,032 and 1,572 feet.
Elevation of cave in floor of crater, 7,380 feet.

IAO VALLEY, MAUI.

Length (from Wailuku), about 5 miles.
Width of Valley, 2 miles.
Depth, near head, 4,000 feet.
Elevation of Puu Kukui, above head of Valley, 5,700 feet.
Elevation of Crater of Eke, above Waihee Valley, 4,500 feet.

Standard and Local Time.

The Standard Time of the Hawaiian Islands is that of Longitude 157° 30′ W., 10 h. 30 m. slower than Greenwich Time. The time of sunrise and sunset given in the tables is of course local time; to correct this to standard time, add or subtract a correction corresponding with the differences between 157° 30′ and the longitude of the station.

The corrections would be for the following stations:

Niihau	+10:8 m	Wailuku, Maui	— 4:0 m
Mana, Kauai	+ 9:0 m	Haiku, Maui	— 4:8 m
Koloa, Kauai	+ 7:9 m	Hana, Maui	— 6:0 m
Kilauea, Kauai	+ 7:3 m	Kailua, Hawaii	— 6:2 m
Waialua, Oahu	+ 2:5 m	Kohala, Hawaii	— 7:0 m
Kahuku, Oahu	+ 2:0 m	Kukuihaele, Hawaii	— 8:0 m
Honolulu, Oahu	+ 1:5 m	Punaluu, Hawaii	— 8:0 m
Kalae, Molokai	— 2:0 m	Ookala, Hawaii	— 9:0 m
Lanai	— 2:5 m	Hilo, Hawaii	— 9:8 m
Lahaina, Maui	— 3:0 m		

LATEST CENSUS—HAWAIIAN ISLANDS.

From Census Bulletin, Washington, D. C., 1900.

Total Population by Districts and Islands—Comparative 1900 and 1896.

HAWAII	1900	1896	OAHU	1900	1896
Hilo	19,785	12,878	Honolulu	39,306	29,920
Puna	5,128	1,748	Ewa	9,689	3,067
Kau	3,854	2,908	Waianae	1,008	1,281
North Kona	3,819	3,061	Waialua	3,285	1,349
South Kona	2,372	2,327	Koolauloa	2,372	1,835
North Kohala	4,366	4,125	Koolaupoko	2,844	2,753
South Kohala	600	558			
Hamakua	6,919	5,680	KAUAI	58,504	40,205
MAUI	46,843	33,285	Waimea	5,714	4,431
			Niihau	172	164
Lahaina	4,352	2,398	Koloa	4,564	1,835
Wailuku	7,953	6,072	Kawaihau	3,220	2,762
Hana	5,276	3,792	Hanalei	2,630	2,775
Makawao	7,236	5,464	Lihue	4,434	3,425
	24,797	17,726		20,734	15,392
Molokai and Lanai	3,123	2,417	Total whole group	154,001	109,020

Comparative Table of Nationality of Population of Hawaiian Islands at various census periods since 1872.

Nationality	1872	1878	1884	1890	1896	1900
Natives	94,944	44,088	40,015	34,436	31,019	29,787
Part Hawaiians	1,487	3,420	4,218	6,186	8,485	7,848
Chinese	1,938	5,916	17,937	15,301	19,382	25,762
Americans	889	1,276	2,066	1,928	2,266	7,283
Hawaiian-born foreigners	849	947	2,040	7,495	13,733	
British	618	883	1,281	1,344	1,538	1,730
Portuguese	395	436	9,377	8,602	8,232	15,675
German	224	272	1,600	1,434	912	1,154
French	88	81	192	70	75	....
Japanese	......	......	116	12,360	22,329	61,115
Norwegian	......	......	362	227	216	410
Other foreigners	364	666	416	419	424	2,584
Polynesian	......	......	965	588	409	653
Total	56,897	57,985	80,578	89,990	109,020	154,001

Population of Honolulu at various census periods.

1884	20,487	1896	29,926
1890	22,907	1900	39,300

Foreign Born Population of Hawaii, 1900, distributed according to country of births:

As reported for the Annual by the Census Bureau, Washington, D. C.

Country	Hawaii	Kauai and Niihau	Lanai and Maui	Molokai	Oahu	Total
Atlantic Islands	522	76	154	12	392	1,156
Austria........	99	26	64	....	36	225
Canada (Engl.)	79	11	9	2	238	339
China	4,202	3,265	2,988	77	11,209	21,741
England.......	142	35	49	6	507	739
Germany	135	334	71	11	603	1,154
Ireland........	25	9	15	4	172	225
Japan	21,314	9,736	10,465	382	14,337	56,234
Norway and Denmark....	31	50	44	6	139	270
Pacific Islands..	49	63	161	11	308	593
Portugal.......	2,217	727	1,032	6	2,530	6,512
Scotland	163	39	39	1	185	427
Spain	54	12	27	....	109	202
Sweden........	40	4	9	2	85	140
Other Countries	162	85	64	9	503	823
Total	29,234	14,472	15,191	529	31,354	90,780

Native Born Population of Hawaii, 1900.

The total native born Population of Hawaii is 63,221, which is made up as follows:

Hawaiian.................	29,787	Negros....................	178
Part Hawaiian............	7,848	South Sea Islanders.......	60
Caucasians................	7,283	Japanese	4,881
Portuguese	9,163	Chinese	4,021

Comparative Table, of Population, Hawaiian Islands—Census Periods 1853-1900.

Islands	1853	1860	1866	1872	1878	1884	1890	1896	1900
Hawaii....	24,450	21,481	19,808	16,001	17,034	24,991	26,754	33,285	46,843
Maui......	17,574	16,400	14,035	12,334	12,109	15,970	17,357	17,726	24,797
Oahu	19,126	21,275	19,799	20,671	20,236	28,068	31,194	40,205	58,504
Kauai	6,991	6,487	6,299	4,961	5,634	*8,935	11,643	15,228	20,562
Molokai...	3,607	2,864	2,299	2,349	2,581	......	2,652	2,307	2,504
Lanai......	600	646	394	348	214	2,614	174	105	619
Niihau.....	790	647	325	233	177	......	216	164	172
Kahoolawe	......	......	......	....	......	......	......	....	....
Total....	73,138	69,800	62,959	56,897	57,985	80,578	89,900	109,020	154,001
All For'g'rs	2,119	2,716	4,194	5,366	10,477	36,346	49,368	69,516	116,366
Hawaiians.	71,019	67,084	58,765	51,531	47,508	44,228	40,622	39,504	37,635

* Including Niihau.

School Statistics, Territory of Hawaii.

From Report of the Superintendent of Public Instruction, Dec 31, 1908.

NUMBER OF SCHOOLS, CLASS, ETC.

ISLANDS	PUBLIC SCHOOLS					PRIVATE SCHOOLS		
	No. of Schools	No. of Teachers	No. of Pupils			No. of Schools	No. of Teachers	No. of Pupils
			Boys	Girls	Total			
Hawaii	58	153	3,327	2,691	6,018	9	32	808
Oahu	36	193	4,142	3,490	7,632	30	189	5,382
Maui, Molokai	42	88	1,760	1,476	3,236	14	44	1,168
Kauai	17	55	1,423	1,165	2,588	3	4	142
Totals	153	489	10,652	8,822	19,474	56	286	2,700

NUMBER OF SCHOOLS, TEACHERS AND PUPILS.

CLASS	Schools	TEACHERS			PUPILS		
		M.	F.	Total	M.	F.	Total
Public Schools	153	107	382	459	10,652	8,822	18,564
Private "	56	73	196	269	2,839	2,543	4,881
Totals	209	100	578	758	13,491	11,365	24,856

AGES OF PUPILS IN PUBLIC AND PRIVATE SCHOOLS.

SEX	Under 6	6–15	Over 15	Total
Boys	602	11,774	1,115	13,491
Girls	668	9,918	779	11,365
Total	1,270	21,692	1,894	24,856

NATIONALITY OF PUPILS.

	Public	Private		Public	Private
Hawaiians	3,959	808	Chinese	2,096	701
Part Hawaiians	2,556	1,135	Japanese	5,479	616
Americans	457	542	Porto Ricans	325	122
English	103	86	Korean	145	23
Germans	153	112	Other Foreigners	497	97
Portuguese	3,655	1,122			
Scandinavian	49	49	Total	19,474	5,383

The nationality of teachers in all schools of the Islands, 1908, was as follows: Hawaiian, 83; Part Hawaiian, 104; American, 348, English, 51; Scandinavian, 9; Germans, 9; Portuguese, 44; Chinese, 20; Japanese, 5; Korean, 3; other Foreigners, 19; Total, 758.

Church Statistics, 1909.

DENOMINATIONS	No. of Churches	No. of Pastors or Priests	No. of Members	No. of Sun. Schools	No. of Sunday School Scholars	Value of Church Property
Christian Church	2	2	150	2	150	$ 13,500
Methodist Epispcl Churh	21	33	1,338	42	1,270	69,000
Latter Day Saints......	80	32	7,954	80	2,738	33,448
Reorganized Church...	1	1	208	3	160	6,500
German Lutheran Ch'ch	2	2	246	2	93	51,000
Seventh Day Adventists	1	1	25	1	32	6,000
Prot. Episcopal Church	* 20	21	3,043	20	985	363,000
Buddhists (4 Sects)....	37	42	33,900	......	....	47,000
Congregational Church.	100	90	7,189	90	8,783	532,689
Roman Catholic Church	105	31	35,000	15	2,400	300,000
Total	369	255	89,043	255	16,611	$ 1,422,137

* Congregations.

Vital Statistics, Territory of Hawaii, 1909.

For the Fiscal Year ending June. Summarized from Board of Health Reports.

ILANDS, ETC.	Births	Marriages	Deaths
Honolulu	1,096	922	925
Other Districts of Oahu County...............	722	66	216
Hawaii County	1,592	343	863
Maui County	831	174	492
Kalawao County..........................	27	7	74
Kauai County	675	136	281
Total, 1908-09......................	4,941	1,648	2,851
" 1907-08......................	4,593	2,214	2,760
" 1906-07......................	2,848	1,680	3,022
" 1905-06......................	2,672	1,238	2,798
" 1904-05......................	2,490	1,180	2,640

Table of Births and Deaths by Nationalities and Counties.

Compiled from Board of Health Report for Fiscal Year ending June, 1909,

NATIONALITY	Honolulu		Other dist. Oahu		Hawaii		Maui		Kalawao		Kauai		TOTAL	
	Births	**Deaths**	**Births**	**Deaths**	**Births**	**Deaths**	**Births**	**Deaths**	**Births**	**Deaths**	**Births**	**Deaths**	**Births**	**Deaths**
American...	99	83	8	1	35	9	11	2	...	....	7	1	160	96
British.....	16	15	4	1	7	6	2	2	....	....	6	....	35	24
Chinese.....	207	114	34	9	77	44	52	29	....	5	39	23	409	224
German.....	26	11	4	....	17	2	4	1	....	1	11	4	62	19
Hawaiian...	190	385	35	60	201	241	152	197	24	58	74	62	676	**1,003**
Part Haw'n	54	39	21	11	37	17	27	19	....	5	9	3	148	94
Japanese....	399	150	540	111	686	418	373	162	1	....	343	142	**2,342**	983
Porto Rican	1	12	4	1	5	12	2	8	....	...	22	11	34	44
Portuguese	7	5	13	4	131	26	46	20	....	...	35	9	232	64
Prt. Haw'n	75	97	54	16	318	80	148	51	....	1	97	23	692	268
Spanish.....	13	7	3	1	69	7	8	1	....	....	23	1	116	17
Others......	9	7	2	1	9	1	6	....	...	4	9	2	35	15
Total........	**1,096**	925	722	216	**1,592**	863	831	492	25	74	675	281	**4,941**	**2,851**

Import Values from United States for fiscal year ending June 1909.

Compiled from Monthly Summary of Commerce and Finance, Bureau of Statistics.

Articles.	Domestic Mdse.	Foreign Mdse.	
		Dutiable	Free
Agricultural Implements	$ 35,106	....	....
Aluminum	1,590	....	....
Animals	314,558	....	....
Art Works	1,870	....	....
Automobiles, and parts of	502,423	....	....
Books, Maps, etc	113,232	$ 25	....
Brass, and manufacture of	44,105	....	....
Breadstuffs	1,961,437	498	$ 312
Bricks	11,290	....	....
Brooms and Brushes	27,296	....	....
Candles	11,697	....	....
Carriages, Cars, etc., and parts of	205,117	....	....
Cement	76,314	3,500	....
Chemicals, Drugs, Dyes, etc	325,288	436,577	12,120
Clocks, Watches, and parts of	20,032	59	....
Coal and Coke	66,970	89	....
Cocoa and Chocolate	16,874	....	....
Coffee, prepared	14,980	....	1,741
Copper, and manufactures of	28,661	....	....
Cork, manufactures of	4,075	....	....
Cotton, manufactures of	1,694,814	16,222	....
Earthen, Stone and Chinaware	53,283	4,148	....
Eggs	21,790	....	....
Explosives	97,660	....	....
Fertilizers	798,209	....	....
Fibers, Textlie Grasses, man. of	147,108	942	....
Fish	321,233	6,755	4,012
Fruits and Nuts	191,287	1,261	....
Furniture of Metal	13,338	....	....
Glass and Glassware	113,209	563	....
Grease and Soap Stock	13,118	....	....
Hair and manufactures of	2,560	....	....
Hay	234,110	....	....
India Rubber, manufactures of	157,455	15	....
Instruments, etc., for scientific pur	109,335	....	....
Iron and Steel and manufactures of	195,967	1,239	....
Sheets and Plates etc	390,839	....	....
Builders' Hardware, etc	567,221	....	....
Machinery, Machines, parts of	668,027	....	....
Nails, Spikes, Pipes, etc	822,241	....	....
Jewelry & man'ftrs., Gold and Silver	5,215	2	....
Lamps, Chandeliers, etc	31,368	....	....
Lead and manufactures of	27,343	....	....
Leather and manufactures of	449,531	....	....
Malt	11,681	....	....
Marble, Stone and manufactures of	8,054	....	....

Import Values from United States for 1909—Continued.

Articles.	Domestic Mdse.	Foreign Mdse. Dutiable	Foreign Mdse. Free
Motor Boats	$ 4,500		
Musical Instruments	42,700		
Naval Stores	13,727		
Nursery Stock	2,572		
Oil Cloths	10,781		
Oils; Animal, etc.	3,200		
Mineral, Crude	754,260		
Refined, etc.	494,762		$ 18,733
Vegetable	46,930	$ 2,132	
Paints, Pigments and Colors	158,867	140	
Paper and manufactures of	278,837	883	
Perfumery, etc.	10,307	149	
Photographic Goods	34,170		
Plated Ware	9,711		
Provisions, etc., Beef Products	91,031		
Hog and other Meat Products	331,978	120	
Dairy Products	341,946	478	
Rice	4,358	109	
Salt	6,160		
Seeds	8,117	178	
Shells	1,352		
Silk and manufactures of	61,357	1,865	
Soap; Toilet and other	116,204	63	
Spices			95
Spirits, etc., Malt Liquors	91,823	16	
Spirits, distilled	144,603	26,891	
Wines	324,623	15,736	
Starch	12,737		
Straw and Palm Leaf, man. of	22,770		
Sugar, Molasses and Confectionery	98,185	351	
Tea			19,835
Tin and manufactures of	54,963		
Tobacco, manufactures of	606,830	3,554	
Toys	22,319	54	
Trunks, Valises, etc.	25,639		
Varnish	6,668		
Vegetables	232,602	1,244	
Wood and manufactures of			
Timber and manufactured	8,748	415	
Lumber, Shingles, etc.	786,462		
Doors, Sash, Blinds and all other	115,745		
Furniture, n. e. s.	185,435		
Wool, manufactures of	286,496	1,614	
Zinc and manufactures of	6,161	64	
All other articles	286,198	2,554	
Total	$17,125,765	$ 530,505	$ 56,848

Value Domestic Mdse. shipments to the United States from Hawaii for fiscal years ending June 30, 1908, and 1909.

Compiled from Monthly Summary of Commerce and Finance, Bureau of Statistics.

Articles.	1908	1909
Animals	$ 2,109	$ 1,572
Art Works, Paintings, etc	1,815	11,520
Beeswax	6,040	....
Books and printed matter	9,732	10,717
Brass and manufactures of	2,682	2,991
Breadstuffs	3,261	7,144
Carriages, etc., and parts of	15,565	53,860
Chemicals, drugs, etc	6,651	2,748
Coffee	157,180	211,668
Copper and manufactures of	3,125	2,241
Cotton and manufactures of	12,638	15,087
Earthenware, etc	758	3,149
Fibers and textiles	9,827	7,695
Fish	883	2,129
Fruits and nuts	797,186	1,446,792
Glass and glasware	8,725	7,116
Hides and skins	87,599	144,837
Honey	30,842	50,412
India Rubber, manufactures of	2,656	3,746
Instruments for science purposes, etc	7,077	6,341
Iron, steel and manufactures of	4,696	8,307
Machinery and parts of	12,990	17,614
All other manufactures of iron, etc	54,065	82,473
Jewelry	19,975	29,695
Leather and manufactures of	35,390	17,782
Marble and stone	859	256
Meat and dairy products	11,763	7,382
Molasses and syrup	20	79
Musical instruments and parts	2,190	2,871
Oils, paints, varnish, etc	16,105	763
Paper and manufactures of	5,392	1,142
Rice	140,768	255,312
Silk, manufactures of	3,475	6,599
Spirits, Wines, etc	16,299	753
Straw and palm leaf, manufactures of	1,419	1,208
Sugar, brown	38,603,138	35,487,912
Sugar, refined	1,212,924	2,144,830
Tobacco leaf and manufactures of	2,772	4,719
Toys	875	342
Vegetables	7,898	10,071
Wood and manufactures of	60,763	102,435
Wool, raw	58,133	52,448
Wool, manufactures of	4,690	7,734
All other articles	152,758	164,548
Total shipments domestic merchandise	$41,595,708	$40,399,040
Total shipments foreign merchandise	44,797	37,905
Total to United States	$41,640,505	$40,436,945

Hawaii's Commerce with U. S. and Foreign Countries.

Total Import and Export Values for 1908 and 1909.

Compiled from Monthly Summary of Commerce and Finance, Bureau of Statistics.

Countries.	Imports.		Exports.	
	1908	1909	1908	1909
Argentina	$ 130,598	....	....	....
Austria-Hungary	....	$ 18	....	....
Azores & Madeira Is.	1,249	....	....	....
Belgium	26	7,142	....	....
Canada	26,093	17,467	$ 15,625	$ 35,383
Great Britain	481,269	303,089	2,073	2,583
Germany	310,134	272,243	5,180	3,794
France	31,479	14,392	....	25
Italy	2,730	3,530	5,305	....
Netherlands	3,947	9,658	....	....
Norway	133	443	....	....
Portugal	....	152	....	....
Spain	1,292	886	....	....
Sweden	443	2,377	....	....
Peru	....	....	4,753	5,135
Chile	360,754	385,104	....	....
China	8,007	14,619	3,805	....
East Indies	708,649	605,542	1,025	....
Hong Kong	324,107	279,749	8,881	2,934
Japan	1,874,670	1,722,796	541,554	15,011
Australasia	350,110	327,043	3,503	7,194
Oceania	64,904	63,514	2,258	5,861
Korea	61	....	227	....
Philippines	1,417	2,737	2,420	4,332
United States*	15,038,155	17,713,118	41,640,505	40,436,945
All other	118	1,073	971	1,900
Total	$19,720,554	$21,746,692	$42,238,145	$40,521,097

* Not including coin shipments.

Exports and Imports for fiscal year ending June 30, 1909.

Exports—Domestic produce to United States	$40,399,040
Foreign produce to United States	37,905
Coin shipments to United States	1,760,680
Domestic produce to Foreign Countries	79,030
Foreign produce to Foreign Countries	5,122
Total export value	$42,281,777

Imports—Domestic produce from United States	$17,125,765
Foreign produce from United States	587,353
Coin shipments from United States	494,349
Produce from Foreign Countries	4,033,574
Total import value	$22,241,041

Quantity and Value of Principal Articles of Domestic Produce Shipped to U. S. for the fiscal year ending June, 1909.

Articles		Quantity	Value
Sugar, raw	pounds.....	983,090,128	$35,487,912
Sugar, refined	"	39,773,800	2,144,830
Coffee, raw	"	1,753,119	211,535
Rice	"	5,823,585	255,210
Fibers	....	....	7,695
Fruits, green	....	....	209,714
canned	....	....	1,229,647
all other	....	....	5,470
Honey	....	....	50,412
Tobacco, unmnftrd................	pounds.....	6,697	4,241
Hides and skins..................	"	1,444,120	144,837
Wool, raw	"	336,936	52,448
Timber, lumber & unmnftrd wood..	....	....	51,161

Comparative Table Importations from Japan, 1904-1908.

Courtesy of Dr. A. Marques.

Articles.	1904-1905.	1905-1906	1906-1907.	1907-1908.
Sake and Wines.....	$154,366	$201,668	$ 213,572	$ 228,344
Rice and its flour....	222,686	285,194	541,686	744,898
Vegetables	79,502	94,095	103,137	145,339
Sauces	115,747	140,472	130,065	145,339
Cotton Goods........	48,225	73,036	68,482	83,629
Fish	80,088	69,006	116,692	128,174
Breadstuffs	18,930	28,263	35,218	32,892
Woodwork	24,030	21,830	37,251	44,985
Silks	27,129	49,119	45,244	71,759
Tea	10,173	14,936	18,158	21,524
Provisions	796	1,072	18,189	19,057
Coal (bituminous)...	38,449	67,703	38,275	49,907
All others...........	142,530	200,076	191,472	158,823
Total	$962,651	$1,247,470	$1,557,441	$1,874,670

For the fiscal year 1908-9 (the detail of which is not yet available) the total importations amount to $1,722,796. This shows that the Japanese importations which since 1904 had been steadily increasing at the rate of over $300,000 a year, this increase being principally in rice and sake, have suddenly decreased by $151,874 on the preceding year, which, with the increase prospective makes a total deficit of over $450,000.

Hawaiian Sugar Plantation Statistics.

Year	Sugar.		Molasses.		Total export Value.
	Pounds	Value.	Gallons.	Value.	
1875	25,080,182	$ 1,216,388.82	93,722	$ 12,183.86	$ 1,228,572.68
1876	26,072,429	1,272,334.53	130,073	19,510.95	1,291,845.48
1877	25,575,965	1,777,529.57	151,462	22,719.30	1,800,248.87
1878	38,431,458	2,701,731.50	93,136	12,107.68	2,713,839.18
1879	49,020,972	3,109,566.65	87,475	9,622.52	3,119,185.91
1880	63,584,871	4,322,711.48	198,355	29,753.52	4,352,464.73
1881	93,789,483	5,395,399.54	263,587	31,630.44	5,427,020.98
1882	114,177,938	6,320,890.65	221,293	33,193.95	6,354,084.60
1883	114,107,155	7,112,981.12	193,997	34,819.46	7,147,800.58
1884	142,654,923	7,328,896.67	110,530	16,579.50	7,345,476.17
1885	171,350,314	8,356,061.94	57,941	7,050.00	8,363,111.94
1886	216,223,615	9,775,132.12	113,137	14,501.76	9,789,633.88
1887	212,763,647	8,694,964.07	71,222	10,522.76	8,705,480.83
1888	235,888,346	10,818,883.09	47,965	5,900.40	10,824,783.49
1889	242,165,835	13,089,302.10	54,612	6,185.10	13,095,487.20
1890	259,789,462	12,159,585.01	74,926	7,603.29	12,167,188.30
1891	274,983,580	9,550,537.80	55,845	4,721.40	6,555,258.20
1892	263,636,715	7,276,549.24	47,988	5,061.07	7,281,610.34
1893	330,822,879	10,200,958.37	67,282	5,928.96	10,206,887.33
1894	306,684,993	8,473,009.10	72,979	6,050.11	8,479,059.21
1895	294,784,819	7,975,590.41	44,970	3,037.83	7,978,628.24
1896	443,569,282	14,932,172,82	15,885	1,209.72	14,933,382.54
1897	520,158,232	15,390,422.13	33,770	2,892.72	15,393,314.85
1898	444,963,036	16,614,622.53	14,537	919.18	16,615,541.71
1899	545,370,537	21,898,190.97	11,455	358.55	21,898,549.52
1900*	344,531,173	13,919,400.21	120	10.00	13,919,410.21
1901**	690,882,132	27,094,155.00	93,820	4,615.00	27,098,770.00
1902	720,553,357	23,920,113.00	48,036	2,187.00	23,922,300.00
1903	774,825,420	25,310,684.00	10	1.00	25,310,685.00
1904	736,491,992	24,359,385.00	11,187	712.00	24,360,097.00
1905	832,721,637	35,112,148.00	26,777	1,282.00	35,113,430.00
1906	746,602,637	24,495,427.00	3,180	177.00	24,495,604.00
1907	822,014,811	27,692,997.00	6,917	355.00	27,693,352.00
1908	1,077,570,637	39,816,062.00	23	20.00	39,816,082.00
1909	1,022,863,927	37,632,742.00	728	79.00	37,632,821.00

* Five and one-half months to June 14. ** Fiscal year ending June 30.

Nationality of Plantation Labor, 1907-1908.

	1907	1908		1907	1908
Americans	519	526	Koreans	2,694	2,058
Spanish	....	685	Chinese	2,950	2,686
Portuguese	3,746	3,655	Philipinos	....	121
Other Europeans	1,124	430	Others	128	90
Hawaiians	1,241	1,111			
Porto Rican	1,871	1,950	Total	44,575	44,789
Japanese	30,303	31,477			

Hawaii's Annual Trade Balance, etc., from 1880.

Year.	Imports.	Exports.	Excess export Values.	Custom house Receipts.
1880	$ 3,673,268.41	$ 4,968,444.87	$ 1,295,176.46	$ 402,181.63
1881	4,547,978.64	6,885,436.56	2,337,457.92	523,192.01
1882	4,974,510.01	8,299,019.70	3,324,506.69	505,390.98
1883	5,624,240.09	8,133,343.88	2,509,103.79	577,332.87
1884	4,637,514.22	8,856,610.30	4,219,096.08	551,736.59
1885	3,830,544.58	9,158,818.01	5,328,273.43	502,337.38
1886	4,877,738.73	10,565,885.58	5,688,146.85	580,444.04
1887	4,943,840.72	9,707,047.33	4,763,206.61	595,002.64
1888	4,540,887.46	17,707,598.76	7,166,711.30	546,142.63
1889	5,438,790.63	13,874,341.40	8,435,560.77	550,010.16
1890	6,962,201.13	13,142,829.48	6,180,628.35	695,956.91
1891	7,439,482.65	10,258,788.27	2,819,305.62	732,594.93
1892	4,028,295.31	8,060,087.21	4,031,791.90	494,385.10
1893	4,363,177.58	10,818,158.09	6,454,980.51	545,754.16
1894	5,104,481.43	9,140,794.56	4,036,313.13	522,855.41
1895	5,339,785.04	8,474,138.15	3,134,353.11	547,149.04
1896	6,063,652.41	15,515,230.13	9,451,577.72	656,895.82
1897	7,682,628.09	16,021,775.19	8,339,147.10	708,493.05
1898	10,368,815.09	17,346,744.79	6,977,929.70	896,675.70
1899	16,069,576.96	22,628,741.82	6,559,164.86	1,295,628.95
1900*	10,231,197.58	14,404,496.16	4,173,298.58	597,897.14
1901**	24,964,693.43	29,342,697.00	4,378,003.57	1,264,862.78
1902	22,036,583.00	24,793,735.00	2.757,152.00	1,327,518.23
1903	13,982,485.00	26,275,438.00	12,292,953.00	1,193,677.83
1904	15,784,691.00	25,204,875.00	9,420,184.00	1,229,338.15
1905	14,718,483.00	36,174,526.00	21,456,043.00	1,043,340.38
1906	15,639,874.00	26,994,824.00	11,354,950.00	1,218,764.13
1907	18,662,434.00	29,303,695.00	10,641,261.00	1,458,843.48
1908	19,757,270.00	42,241,921.00	22,484,651.00	1,550,157.32
1909	21,424,980.00	40,521,504.00	19,096,524.00	1,396,379.91

* Five and one-half months to June 14th. ** Twelve and one-half months to June 30, 1901. Imports from U. S. ports for 1901 estimated at $22,000,000, and for 1902 at $19,000,000.

Summary of Insurance Business, Territory of Hawaii, for the year 1908.

From Report of Insurance Commissioner,

Class.	Amount Written	Amount Premiums	Losses and Claims paid
Fire	$25,214.465.13	$ 445,095.44	$ 39,096.52
Marine	37.590,422.68	182,652.67	17,265.50
Life	1,429,948.00	* 493,807.71	381,435.91
Accident, etc	....	16,366.76	2,263.17
Automobile	....	1,400.49	1,077.50
Surety and Fidelity	....	54.00	....
Liability	....	7,295.87	801.17
Plate Glass	....	14,787.12	....
Burglary	....	1,487.15	120.00
Total	$64,234,835.81	$1,162,927.21	$442,059.77

* Of this amount $50,687.78 is new business and $443,119.93 renewals.

Table of Receipts, Expenditures, and Public Debt of Hawaii, for Biennial Periods up to 1894, then Annually.

(From Official Reports.)

Years.	Revenue.	Expenditures.	Cash Balance in Treasury.	Public Debt.
1856	$ 419,288.16	$ 424,778.25	$ 28,096.84	$ 22,000.00
1858	537,223.86	599,879.61	349.24	60,679.15
1860	571,041.71	612,410.55	13,127.52	128,777.32
1862	528,039.92	606,893.33	507.40	188,671.86
1864	538,445.34	511,511.10	22,583.29	166,649.09
1866	721,104.30	566,241.02	169,059.34	182,974.60
1868	825,498.98	786,617.55	163,576.84	120,815.23
1870	834,112.65	930,550.29	61,580.20	126,568.68
1872	912,130.74	969,784.14	56,752.41	177,971.29
1874	1,136,523.95	1,192,511.79	746.57	355,050.76
1876	1,008,956.42	919,356.93	89,599.49	459,187.59
1878	1,151,713.45	1,110,471.90	130,841.04	444,800.00
1880	1,703,736.88	1,495,697.48	338,880.44	388,900.00
1882	2,070,259.94	2,282,599.33	126,541.05	299,200.00
1884	3,092,085.42	3,216,406.05	2,220.42	898,800.00
1886	3,010,654.61	3,003,700.18	9,174.85	1,065,600.00
1888	4,812,575.96	4,712,285.20	109,465.60	1,936,500.00
1890	3,632,196.85	3,250,510.35	491,152.10	2,599,502.94
1892	3,916,880.72	4,095,891.44	312,141.38	3,217,161.13
1894	3,587,204.98	3.715,232.83	184,113.53	3.417,459.87
1894	1,972,135.43	1,854,053.08	69,225.76	3,574,030.16
1895	2,050,729.41	2,284,179.92	302,676.27	3,764,335.03
1896	2,383,070.78	2,137,103.38	315,193.16	3,914,608.35
1897	2,659,434.16	2,617,822.89	456,804.43	4,390,146.65
1898	2,709,489.12	2,299,937.57	740,280.21	4,457,605.85
1899	3,854,231.50	3,038,638.38	1,531,784.29	4,890,351.49
1900	2,772,871.87	3,727,926.28	624,471.25	4,226,374.61
1901	2,140,297.36	2,576,685.53	287,131.30	939,970.31
1902	2,473,172.81	2,382,968.90	77,914.36	1,093,970.31
1903	2,387,715.88	2,603,194.20	56,613.29	2,185,000.00
1904	2,415,356.33	2,844,054.81	68,592.03	3.317,000.00
1905	2,354,783.37	2,240,731.55	59,408.49	3,861,000.00
1906	3,320,998.90	2,512,675.89	335,331.37	3,818,000.00
1907	2,716,624.00	2,665,845.74	348,216.51	3,718,000.00
1908	2.551,522.21	2,508,0001.51	391.737.19	3,979.000.00
1909	3,051,526.81	2,934,984.10	453.106.76	3,959.000.00

Hawaii's Bonded Debt, June 30, 1909.

Fire Claims Bonds issued	$ 315,000
Public Improvement 4½% Bonds, 1903-04	1,000,000
Public Improvement 4¼% Bonds, 1904-05	1,000,000
Refund Bonds, 1905, 4%	600,000
Public Improvement 3½% Bonds	1,044,000
Total Bonds Outstanding	$3.959.000

INTERNAL TAXES FOR BIENNIAL PERIODS 1888-1894; SINCE, ANNUAL.

Periods	Real Estate	Personal Property	Poll	Income	Ins'ance	Dogs	Ca'r'ges	Penalty and Costs	Roads Carts and Bicycles	School	Totals
1888	$ 252,362	$ 299,974	$ 63,115	$........	$ 6,279	$ 11,985	$11,835	$......	$ 120,872	$ 119,565	$ 885,987
1890	339,390	329,908	69,116	....	3,063	14,100	13,940	......	132,285	131,160	1,032,963
1892	358,745	341,205	78,964	....	4,156	13,660	14,628	......	152,137	151,906	1,115,401
1894	338,894	213,126	78,990	....	3,867	11,744	11,980	5,476	152,268	152,247	1,068,592
1894 9 months	167,083	151,580	39,050	....	1,850	4,698	4,427	3,922	74,891	75,082	522,583
1895	196,608	164,272	43,663	....	1,803	5,971	5,425	7,297	84,183	83,470	592,692
1896	240,971	210,194	46,655	....	1,837	6,302	5,889	7,255	90,297	89,443	698,844
1897	246,828	242,719	47,973	....	974	7,313	5,849	10,375	101,858	95,814	759,703
1898	268,203	266,621	49,580	....	2,185	6,248	5,717	8,476	105,814	98,974	811,818
1899	384,594	377,075	54,828	....	2,883	6,141	6,253	10,155	116,374	109,814	1,068,117
1900	440,265	487,078	67,119	....	3,224	5,377	7,241	9,280	141,342	134,232	1,295,158
1901	521,451	571,964	50,829	279,743	3,810	4,589	8,397	8,984	108,829	101,258	1,659,854
1902	560,111	584,112	46,369	192,506	4,663	3,864	9,072	11,345	100,684	92,734	1,605,460
1903	609,241	593,288	49,490	187,497	4,681	4,404	9,864	13,267	107,650	98,980	1,678,362
1904	615,127	562,382	49,531	155,786	56	4,543	9,427	13,669	107,885	99,062	1,617,468
1905	663,000	667,655	49,020	326,733	Autos	5,161	9,670	14,739	107,156	98,040	1,941,183
1906	651,838	617,240	50,069	146,756	1,240	5,382	......	18,876	129,817	100,138	1,721,356
1907	639,346	628,904	46,818	227,727	2,220	6,245	......	16,885	124,474	93,636	1,786,255
1908	640,051	635,266	49,144	269,000	3,680	6,952	*30,718	14,939	† 97,842	97,846	1,845,438
1909	668,722	678,886	47,104	398,265	4,640	5,590	*30,738	14,698	† 94,208	94,208	2,037,059

* All vehicles other than Automobiles. † Roads only.

Annual Taxes, from 1899, showing per capita rate collected.

	Taxes collected	Per capita*		Taxes collected	Per capita*
1899	$1,068,117	$ 7.11	1905	$1,941,183	$ 12.60
1900	1,295,158	8.41	1906	1,721,356	11.17
1901	1,659,854	10.77	1907	1,786,255	11.60
1902	1,605,460	10.42	1908	1,845,438	11.98
1903	1,678,362	10.89	1909	2,037,059	13.22
1904	1,617,468	10.50			

* Omitting fractions.

SUMMARY OF METEOROLOGICAL OBSERVATIONS, 1908-1909.

Compiled from U. S. Weather Bureau Records, by Wm. B. Stockman, Section Director.

(Continued from preceding Annuals.)

	MONTH	BAROMETER		RAIN-FALL	REL. HUM.		MEAN TEMPERATURE						ABSO. HUM.		
		8 a.m.	8 p.m.		8 a.m.	8 p.m.	Min.	Max.	6 a.m.	2 p.m.	9 p.m.	Mean of Max. and Min.	Gr. to Cu. ft.	Cloud Amt.	Wind Force
1908	July	30.06	30.04	0.16	64	69	71.8	81.0	73	80	74	76.4	6.372	5.6	8.3
	August	30.03	30.01	0.91	66	72	72.2	82.1	73	81	75	77.2	6.873	4.8	8.1
	September	30.04	30.02	0.75	66	71	72.4	81.6	74	80	75	77.0	6.774	5.1	8.0
	October	30.01	30.00	0.22	66	71	71.4	81.0	72	79	74	76.2	6.565	4.5	7.2
	November	30.03	30.02	1.10	65	70	68.6	78.7	70	77	73	73.6	6.165	3.6	7.9
	December	30.11	30.09	2.68	66	71	67.3	76.5	69	75	70	71.9	5.786	5.5	10.3
1909	January	30.05	30.03	2.33	71	76	66.4	74.8	68	73	70	70.6	6.016	5.6	9.3
	February	30.08	30.06	2.62	71	76	64.4	74.6	67	73	69	69.5	5.905	5.4	9.2
	March	30.09	30.07	3.49	72	74	64.9	74.4	67	72	69	69.6	5.825	6.6	11.1
	April	30.08	30.06	1.01	66	77	67.1	77.0	68	75	70	72.0	6.126	5.9	7.6
	May	30.08	30.07	0.41	65	72	68.9	79.2	70	78	73	74.0	6.165	5.5	8.8
	June	30.07	30.05	0.67	66	72	70.9	80.8	72	79	74	75.8	6.662	5.8	8.9
	Year	30.06	30.04	16.35	67	73	68.9	78.5	70	77	72	73.6	6.270	5.3	8.7

TABLE OF RAINFALL, Principal Stations.

Compiled from Weather Bureau Reports.

Stations	Observer	1908					
		July	Aug.	Sept.	Oct.	Nov.	Dec.
HAWAII							
Waiakea	C. C. Kennedy	6.24	10.56	14.29	9.83	5.58	14.37
Hilo (Town)	L. C. Lyman	7.96	9.21	13.28	10.80	0.69	15.58
Ponahawai	J. E. Gamalielson	8.53	11.27	21.60	12.23	9.07	22.41
Pepeekeo	A. Silva	5.87	8.37	12.74	10.26	9.67	13.91
Hakalau	J. M. Ross	11.88	10.40	14.43	13.29	10.58	15.80
Laupahoehoe	E. W. Barnard	14.53	11.74	14.88	13.04	10.75	18.63
Ookala	W. G. Walker	11.84	11.81	12.36	10.10	10.21	20.64
Kukaiau	E. Madden	7.58	7.86	7.61	5.84	8.56	16.74
Paauhau	Jas. Gibb	5.67	6.04	5.19	3.12	8.63	9.90
Honokaa	P. V. Knudsen	6.82	7.23	7.59	3.75	9.87	12.11
Waimea	Jas. McCrosson	4.58	4.91	2.87	0.75	7.39	4.91
Kohala	Dr. B. D. Bond	8.46	6.58	6.28	3.45	4.21	8.24
Holualoa	L. S. Aungst	2.94	5.00	4.90	1.58	1.15	0.17
Kealakekua	Rev. S.H. Davis	3.97	4.48	5.68	1.09	1.48	1.76
Naalehu	C. Wolters	0.54	1.71	1.90	1.45	0.43	0.46
Pahala	Haw. Agr. Co.	0.00	0.18	1.36	1.32	1.49	0.49
Volcano House	Geo. Lycurgus	0.90	2.50	4.03	5.42	0.00	8.65
Olaa (17 miles)	Olaa Sugar Co.	10.93	17.87	26.01	14.02	16.32	26.59
Kapoho	H. J. Lyman	3.19	5.75	6.90	5.95	3.46	6.62
MAUI							
Haleakala Ranch	L. von Tempsky	0.25	2.02	3.03	0.00	4.29	5.14
Puuomalei	A. McKibbin	2.87	3.67	4.91	0.95	5.90	11.50
Makawao	F. W. Hardy	2.44	1.91	3.43	0.17	7.69	11.59
Kula	Mrs. D. von Tempsky	0.90	0.98	0.22	1.70	0.55	0.00
Haiku	D. D. Baldwin	5.86	5.22	4.57	2.50	4.93	9.37
Keanae Valley	W. F. Pogue	20.96	23.40	20.16	11.31	15.44	23.13
Nahiku	C. O. Jacobs	9.23	14.71	12.48	6.92	11.91	9.44
Wailuku	Bro. Frank	0.46	0.24	0.23	0.11	1.93	0.89
OAHU							
Honolulu	U. S. Weather Bureau	0.16	0.91	0.75	0.22	1.10	2.68
U. S. Exp. Stn.	Dr. E. V. Wilcox	0.67	2.49	2.36	1.15	1.88	5.44
Kinau Street	W. R. Castle	0.14	0.85	1.32	0.19	1.46	2.05
Manoa	F. N. Parker	2.70	7.47	4.88	2.70	4.73	7.00
Nuuanu Ave.	W. W. Hall	0.51	1.52	1.48	0.80	1.40	4.78
Electric Lt. St.	A. Walker	0.92	3.39	3.27	2.39	1.33	5.18
Luakaha	L. A. Moore	5.72	11.53	14.02	6.14	5.30	12.37
Waimanalo	A. Irvine	0.76	1.84	1.31	1.28	1.89	1.59
Maunawili	Jno. Herd	2.48	6.84	5.00	4.43	3.86	3.93
Ahuimanu	H. R. Macfarlane	2.23	3.97	5.86	3.01	4.77	1.77
Kahuku	R. T. Christophersen	0.91	1.12	2.13	1.05	0.89	1.09
Ewa Plantation	R. Muller	0.00	0.53	1.12	0.20	0.61	0.36
Wahiawa	H. C. Brown	0.50	1.24	4.75	1.23	1.28	2.81
Waiawa	A. Lister	0.93	2.50	4.88	1.44	1.34	6.09
Waimalu	Hon. Plan. Co.	0.26	1.23	2.20	0.72	1.25	3.82
KAUAI							
Grove Farm	G. N. Wilcox	1.39	2.43	5.75	5.93	0.67	2.11
Kealia	Makee Sugar Co.	1.13	2.31	2.54	3.36	0.20	1.09
Kilauea	L. B. Boreiko	2.03	4.49	4.30	6.51	0.96	1.93
Hanalei	E. G. K. Deverill	4.11	7.43	8.98	7.31	0.71	4.22
Eleele	McBryde Sugar Co.	0.19	0.39	0.95	1.39	0.01	0.67
Kukuiula	F. L. Zoller	0.00	0.91	1.03	1.80	0.32	1.09
Waiawa	A. F. Knudsen	0.24	0.51	0.38	1.36	0.08	0.00

Throughout the Hawaiian Islands, 1908-09.

By Wm. B. Stockman, Section Director. Continued from last Annual.

Locality	Feet Elev.	1909						
		Jan.	Feb.	Mar.	April	May	June	Annual
HAWAII								
Waiakea	50	6,04	9·69	27.98	6.20	11.52	5,85	128.15
Hilo	100	6.87	10.22	29.53	7.45	10.79	7.47	135.85
Ponahawai	500	7·53	12,35	35.74	6.85	14,17	5.75	167.50
Pepeekeo	100	7.08	6.15	30.77	12.48	10,86	5.64	133.80
Hakalau	200	7.74	12.11	34.73	15.60	10.06	6.59	163.21
Laupahoehoe	500	8.80	9.12	30.62	16.07	8.35	4.93	161.46
Ookala	400	7,48	9.10	31.46	15,83	7,49	5.69	154.01
Kukaiau	250	6,10	7.04	24.54	16.09	3,77	2,94	114.67
Paauhau Mill	300	4.16	7.62	15.43	14,33	3,67	2,14	85.90
Honokaa	470	5.54	7.15	13.95	11,88	3,10	1,90	90,89
Waimea	2720	1.35	6.25	5.74	1.27	1,83	1.54	43.39
Kohala Mission	521	3.17	6,29	8.40	6.17	4.10	2.21	67.56
Holualoa	1350	1.63	5.22	4.95	2,01	11.75	5.97	47.27
Kealakekua	1580	0,69	4.85	4,29	4.69	11.92	5.90	50.80
Naalehu	650	0,40	4.37	4.94	1.67	2.04	0,78	20.69
Pahala	850	0.32	4,31	14.74	3,00	1,50	0.25	18.96
Kilauea Crater	4000	2.25	8.97	13,85	3.25	6.00	3.60	59.42
Olaa, Puna	1530	8.66	14,09	33.94	9.18	11.13	6.12	194,86
Kapoho	110	3,90	8,84	15.83	6.78	5.93	4,47	77.62
MAUI								
Haleakala Ranch	2000	0.50	7.80	5,96	1.73	0,37	0.55	31,64
Puuomalei	1400	3.52	9.49	20.96	5.22	3,91	3.54	76.44
Makawao	1700	2.36	18,23	22.11	5.97	4,07	......	....
Erehwon	4000	0.17	3.30	2,75	2.80	4.03	1.86	19.26
Haiku	700	3.24	5.85	16.33	4.60	5,56	5.16	73.19
Keanae	1000	9.37	16.60	63.15	18.17	21.58	20.40	263.67
Nahiku	700	4.04	11.13	36.78	12.32	12,92	12.21	154.09
Wailuku	250	0.54	3.76	5.44	4,08	1.16	0.47	19.31
OAHU								
U. S. W'th'r B're'u	108	2,33	2.62	3.49	1.01	0.41	0.67	16.35
Kewalo-uka	350	3.61	......	6.56	......	......	2.73	....
Kinau Street	50	2.29	2.58	4.27	1.07	0,36	0.58	17.16
Woodlawn Dairy	285	3.82	4.46	11.86	5.47	6.21	7,22	68.52
Nuuanu Avenue	50	3.42	4,37	7.07	2.01	1.07	2,44	30,87
Nuuanu Elec. St'n	405	3.00	4.44	8,09	4.14	2.72	4.86	43.73
Nuuanu Wat'r W s	850	5.70	8.26	22.35	10.78	9.45	12.37	123.99
Waimanalo	25	4.76	3.01	4.95	6.56	1.84	1.22	31.01
Maunawili	250	4.30	5.42	11,85	7.97	5,31	5.25	66.64
Ahuimanu	350	6.70	4.74	17.72	8.35	4,79	3.51	67.42
Kahuku	25	3.22	2.57	14,70	1.89	1,60	1.59	32.76
Ewa	50	3.10	4.93	3.04	0,44	0.10	0.30	14.73
Wahiawa	870	9.02	3.02	9.90	3.28	2.26	2,62	41.41
Waiawa	675	5.74	4.45	7.86	1.85	2.10	3,88	43.06
Ewa	200	2.29	2,51	5.09	1.26	0.44	1,30	22.37
KAUAI								
Lihue	200	6.97	3.17	13.96	2,75	2.33	1.49	48.95
Kealia	15	4.53	1.54	11.82	2,30	1,33	1.93	34.08
Kilauea	342	3.66	4.44	17.23	2.85	2,16	3.81	54.37
Hanalei	10	......	4,88	28.91	6.36	3.21	6,90	....
Eleele	150	3.22	1.33	12,46	3,68	0.25	0.96	25.50
Koloa	100	4.72	3,57	11.53	2,89	1,33	1,00	30.19
Waimea	30	2,28	1,10	10.84	0,66	0.06	0,20	17.71

TABLE OF ANNUAL LICENSE FEES.

Territory of Hawaii.

Alcohol	$ 50.00
Awa—Honolulu	500.00
Hilo, Wailuku or Lahaina	100.00
All other	50.00
Auction—Honolulu	600.00
All other	15.00
Banking—Honolulu	750.00
Hilo	500.00
All other	250.00
Billiard—each table	25.00
Bowling Alley—each alley	25.00
Beef Butcher—"Slaughter and Sell," Honolulu	100.00
All other	20.00
Beef Butcher—"Sell"	10.00
Boat—With 4 or more oars	8.00
With less than 4 oars	4.00
Boatman	1.00
Barber	10.00
Brewery	250.00
Certificate of Authority	10.00
Car License Tax—per car	10.00
Custom House Broker	50.00
Collection Agency	25.00
Dray, Wagon, etc	2.50
Driver	1.00
Dyeing or Cleaning, etc	25.00
Emigrant Agent	500.00
Employment Agency	25.00
Foreign Corporation	100.00
Farrier and Horse-shoer	5.00
Fishing Boat	5.00
Garage—Honolulu	50.00
All other	25.00
Hack and Passenger Vehicle—per passenger	1.00
Hotel and Restaurant	50.00
Insurance Agent	2.00
Kerosene Storage	200.00
Lodging and Tenement House	2.00
Laundry	25.00
Livery Stable—Honolulu	50.00
All other	25.00
Liquor—1st class, wholesale	1000.00
2nd class, retail saloon or hotel	750.00
Restaurant	500.00
For premises outside 5 mile radius from 1st to 3d class postoffice	250.00
3rd class, not over 3 days, per day	15.00
4th class—wine	5.00
5th class—manufacturing	5.00
Milk	2.50
Merchandise	25.00
—— Broker	100.00
—— Peddler	50.00
Notary Public—Honolulu	10.00
All other	5.00
Pork Butcher—"Sell"	10.00
—— "Slaughter and Sell," Honolulu	40.00
All other	20.00
Peddling Cake	25.00
Pawnbroker	50.00
Plumbers	10.00
Public Show—per show	1.00
Poisonous Drug	50.00
Second Hand Dealer, etc.	25.00
Stock and Share	100.00
Steam Laundry	50.00
Social Club Tax	200.00
Tobacco, Cigars, &c	10.00
Trust Company	250.00

Seating capacity of principal Churches, Halls and Places of Amusement—Honolulu.

Roman Catholic Cathedral, Fort street	1,500
Hawaiian Opera House, King street	1,000
Kawaiahao Church (Native), King street	1,000
The Orpheum, Fort street	945
Empire Theatre (moving pictures)	930
Central Union Church, Beretania street	850
St. Andrew's Cathedral (Episcopal), Emma street	800
Chas. R. Bishop Hall, Punahou Preparatory Building	600
The Bonine (moving pictures)	750

SCHOOL REPORTS.

In connection with the Church Statistics on page 21 the following School reports have been presented for 1909:

The German Lutheran Church, in Honolulu, maintains a day school in connection with their work of 40 pupils in morning kindergarten and afternoon school, and a summer school of 30 children.

The Howanji Mission of Buddhists report 25 day schools established throughout the Territory "for the instruction of Japanese children in their language and history, and the encouragement of American thought and system." They have one high grade school located in Honolulu. The number of teachers in all the schools are 50, with 2,000 scholars including about 100 white people for the study of Japanese.

The Jodo Mission of Buddhists report nine day schools, engaging 20 teachers and attended by 1,200 pupils.

Arrivals and Departures of Aliens, Honolulu, For Fiscal Year Ending June 30, 1909.

Nationality.	Arrivals.	Departures.
Japanese	1,510	2,378
Chinese	233	794
Korean	2	114
Spanish	1	1
Portuguese	36	5
English	174	186
East Indian	38	10
Scotch	61	24
German	17	17
Greek	19	...
All other	21	20
Total	2,112	3,549

Population of Honolulu, 1900.

Compiled from U. S. Census Report, by Dr. A. Marques.

Hawaiians and Haw'n. born foreigners	19,023	Pacific Islanders	293
Chinese	6,842	Scandinavian	146
Japanese	5,595	French	80
American	2,846	Spanish	72
Portuguese	2,410	Italian	54
British	1,107	Other Europeans	197
German	553	Various	88
		Total	39,306

Coast Line Distance of Hawaiian Islands.

Courtesy of W. E. Wall, Government Survey Office.

	MILES		MILES
Distance around Hawaii	297	Distance around Molokai	100
" " Oahu	177	" " Lanai	53
" " Maui	146	" " Niihau	48
" " Kauai	106	" " Kahoolawe	30

Total coast line distance around the islands 957 miles.

CUSTOMS TABLE REVIEW, 1909.

HAWAII tallies another year of exceptional commercial prosperity as is indicated in the tables of import and export on pages 22 to 26 inclusive, giving us the banner year of $64,523,024 for merchandise received in and shipped out of the territory for the fiscal year ending June 30, 1909—including specie.

The total export value for the year under review is $42,281,777, including coin shipments of $1,760,680, of which total amount all but $84,152 went to the main land. The gain over the exports of 1908 show $39,856.

Of imports for the year, including coin, valued at $22,241,247 —an amount exceeded but once in the history of the territory— is shown a larger increase over the preceding year, being $2,483,977, or a little over double its gain on 1907. The table of Hawaii's Commerce on page 25 shows at a glance that this increase of importations comes from the main land, to the shading off in all foreign countries with but few exceptions in small amounts, compared with 1908. And of exports to all lands the falling off is as general throughout, excepting Canada, Oceania and Philippines. Japan alone dropped $526,543.

The tables as a whole well illustrates the gradual development and enlarging business of the territory, indicative of increasing population and needs, and in a comparative analysis with the tables of the preceding year there are several interesting features observed. Taking up the import tables for review we find under the "Animal" division that we received 102 head of cattle less this past year, reducing this item in value from $25,800 in 1908 to $8,550 in 1909. Hogs, however, more than trebled their number and value in the same period, increasing from $5,360 to $17,887. Horses also increased in number from 176, valued at $38,212, to 718 in 1909, valued at $124,891, while mules increased in number and value about fifty per cent.

Under the head of "Meat and Dairy Products" we find canned beef advanced somewhat, but fresh beef—which does not appear in the tables for 1907 or 1908—was imported in 1909 to the value of $22,284. Salt beef fell off. Fresh pork imports jumped from $3,971 in value in 1908 to $19,362 this past year, and hogs, as mentioned, from 502 to 1,660 in number. Pickled pork fell off somewhat in value but mutton increased. Poultry and game shows a gain also. Strictly Dairy products all continue to show large strides; butter being credited with an import value of $173,648; cheese with $34,144, and condensed milk with $135,154.

All breadstuffs except bread and biscuit shows a gain over like importations of the preceding year, the exception being due, likely to the local factory's facilities and quality of its product. The total increase in value for the year is given at $286,250. Our bills for beans and peas have increased to $39,196; onions declined some $10,000, but potatoes cost us nearly one hundred thousand dollars for the year's need.

Fruits and nuts—including fresh, canned, and preserved—have gained, on the whole, $8,929 over the imports of 1908, apples and oranges among the fresh fruits showing most favor while canned goods appear to have suffered all round, noticeable alike in meats, fruits, vegetables and fish excepting fresh salmon and condensed milk.

It is inexcusable to find roasted or prepared coffee in the import list in increasing quantity, for which we were taxed $14,980 in 1909, and honey also to the value of $1,570, when better grades in both articles are produced here. It seems strange also in so productive a sugar country as this that molasses, syrup and sugar, should appear among our imports, though at a decline from the two preceding years; the total value for 1909 being $56,240 as against $103,258 in 1908, and $97,570 in 1907.

Advance in the electrical systems of the territory is shown by the increased value of instruments and appliances of $37,168 over that of 1908, notwithstanding the decline this past year in the imports of electrical machinery of $34,000.

In lines of construction and building improvements iron and steel products show a total increase in value of $531,382 over the preceding year, the principal items being steel rails, bar iron, pipes and fittings, wire and miscellaneous. With the exception of "sawed timber," which drops this last year from the list, lumber in all lines—including doors, sash and blinds—have made large advances both in quantity and value, reaching the total sum of $1,096,390, notwithstanding the last item which stood at over $30,000 in both 1908 and 1907. Bricks have fallen off fully one-third. Cement from the main land increased from $73,466 in 1908 to $76,314 in 1909, though in the dutiable supply it fell off some $3,460, thus making no material change in this article.

Crude mineral oil imports fell off 3,762,200 gallons, yet it cost $13,680 more than our supply for 1908; this last year's bill running up to $754,260. All other oils, of refined, mineral and vegetable grades also advanced materially.

The hay and grain requirements of the territory continue to draw heavily against us, having reached the sum of $1,387,562 for the year 1909. Of this amount hay represents a value of $234,110; barley, corn, oats and wheat, $620,466, and bran, millstuffs and other animal feed $632,986; all to the enrichment of our coast neighbors for the want of local farms.

Notwithstanding, the better temperance tone of the community that "held the fort" at the last legislature, the imports of wines and spirits for the year increased from $432,358 to $501,853, malt liquors falling off in the same period $12,541.

Of tobaccos, unmanufactured leaf drops out entirely and plug declines from $83,836 to $36,193. Cigars jump in import value from $93,004 to $144,329 and cigarettes from $58,839 to $105,375 and all other kinds increased $108,624; the total for the year reaching $606,830.

Smoker's prepared opium shows steady increase, the importations the past three years being 10,418 pounds in 1907 valued at $93,720; 13,900 pounds in 1908 valued at $134,357, and 26,728 pounds this past year valued at $337.755.

Printing paper shows a steady advance in values the past three years, with changing quantity, indicating higher grades predominating to meet our needs. In 1907 was received the largest, amount, being 999,106 pounds, valued at $36,646; in 1908 the quantity fell off to 912,115 pounds but increased in value to $39,328. For 1909 it rose to 960,113 pounds at an increased' value of $48,085. Writing paper and envelopes which declined in 1908 from the figures of the year previous more than recovered itself in 1909, our import value on this line being $80,556.

Among the remaining items of interest showing increase of imports is that of automobiles, which is perfectly natural, all matters considered, seeing we are credited with the wealth and progressive new-century spirit in being fully "up to date." Autos show the receipt of 205 the past year as against 131 in 1908, at an increased value of $225,725 for the luxury, notwithstanding the reducing rates thereon. Cars for steam railways have fallen off some $40,000, but cars for other railways jumped from $12,222 in 1908 to $85,640 in 1909, of which amount $25,345 came in the closing month of the fiscal year.

Coming now to the tables of export the list of articles for consideration, while far less diversified under Federal statistical classification of what represents the territory's productions than would be shown under former conditions, nevertheless the limited industries are making commendable progress. Sugar, our main staple, has marketed another heavy crop, the second largest in our history, the decline being 3,115,226 pounds in raws from that of 1908, but an increase of 931,906 pounds refined over last, the banner year. The total value of sugar exports is shown to be $37,632,742, which, while $2,183,322 behind that of 1908 it is ahead of 1907 by nearly ten million dollars.

Fruits have already taken second place in the list of domestic products, showing the strides of the pine apple industry both in the fresh, and canned and preserved product, of which a full account was given in the last Annual. The customs tables do not favor us with any detail of kind or quantity. Parties having a knowledge that we do something in the exportation of bananas, alligator pears, coconuts, mangoes, pineapples and other tropic fruits may accept any or all of these under the head of "green, ripe or dried" for the total value shown, while "canned" fruits in our present case will represent pineapples, and "all other" must stand for pines and various other fruits and preserves in glass, for which total value (also without quantity) is given. These three lines then of our fruit product shows an export value of $209,676 for green fruits, $1,229,647 for canned, and $5,470 for preserved fruits; a total for the year of $1,444,793, or nearly double that of 1908.

Coffee shows another year's gain, the improvement of 1908 being $54,488 out of a total export value of $211,668 for the past year. Rice is recovering in good shape, its exports for the period under review being valued at $255,312, a gain of $114,442 on the preceding year. Fibers, under which head comes our sisal product, shows a falling off for some reason of fully fifty per cent.

The bee industry does not appear as strong in the domestic export table as it should, beeswax to the United States not appearing, and if shipped foreign as much of the honey is done the tables of export to foreign countries is not shown in detail. To the value of honey shipped to the main land given as $50,412 should be added $4,905 for 221 cases of beeswax sent to New York, and $23,955 for honey shipments to Europe for the fiscal year ending June, 1909; a total value of $79,272.

Hides and skins show a little improvement again over the preceding year, the gain for 1909 being $57,238 out of the year's total value of $144,837. Leathers and manufactures have fallen off fully fifty per cent., though in all probability this difference represented returned goods, largely, rather than local product.

Tobacco in the unmanufactured leaf, the product of our new industry, figures for the first time in our tables, showing 6,697 pounds exported, valued at $4,241.

Wood, in "hewn and sawed timber, and lumber" has made some advance, shipments of the former to the value of $45,810 having gone forward, and $5,331 of the latter. We had hoped for a larger showing from the recent effort in this direction. Wool shows a slight falling off. On the whole the commercial status of the territory by these tables make a very creditable showing.

BUSINESS BUILDING CHANGES.

Makee Block and Canton Hotel Reminiscences of Early Honolulu.

AMONG the various building improvements of Honolulu entered upon this past year there are changes, in two localities, at least, of structures whose histories are deserving of more than passing notice from their connection with the early days and prominence of the men identified therewith.

First, the Makee block, north corner of Queen and Kaahumanu streets: This three story building, the cellar of which was being dug and foundation laid on the writer's arrival in May, 1853, was the first pressed brick structure erected here, and with its granite doorways, sills and steps; its slate roof, iron doors and shutters, was the first fire proof building of the town. It was said to have been designed in Boston to the order of Makee & Anthon, and the materials all prepared and shipped out here ready for erection. The summer of 1854 witnessed the completion of this, what was long known as the Makee & Anthon block, though the firm, consisting of Captain James Makee and Julius A. Anthon, doing business as Makee, Anthon & Co., dissolved partnership as Shipping and Commission Agents, December 31, 1852. The property for the site of the building and extending several rods up Kaahumanu street was purchased from Swan & Clifford, a prominent firm of that period, in March, 1853, for $8,055, which the record states as a "deed for 299 years from December 9, 1826."

Upon completion of the building Dr. Edward Hoffman became its first tenant, occupying the corner store with its two adjoining offices on Kaahumanu street. The rounding corner afforded at that time an attractive show window which, with the appropriate internal fittings of the "New Drug Store," obtained credit for it as "the neatest and best appointed of its kind in Honolulu." Beside the esteem in which the genial little Doctor was held in the profession, his eminence as a pianist and leadership in society naturally made his store famous as a social center of news and raconteur, not only to residents but the seafaring visitors also.

In the summer of 1857 Dr. Hoffman built a two story drug store on Queen street adjoining H. Hackfeld & Co., fitting up the same in fine style and moving thereto whereupon D. N. Flitner succeeded to the corner, but in the fall of the following year the Hoffman drug store moved back to its quarters in the Makee block and continued there for some ten years.

The second tenents to secure occupancy, a month later, were Aldrich & Bishop, Importers and Dealers in General Merchandise, taking the Ewa half of the first and second floors of the building. They dealt also in island produce and held the agency of the Lihue sugar plantation and the Kauai grown tobacco of Archer & Gruben and cigars manufactured therefrom. The house was prominently identified with the business interests of the islands and became an important factor in the development of its agriculture and commerce. This firm was dissolved February 12, 1858, and the business continued under the name of

W. A. Aldrich up to the close of 1861. With the opening of 1862 J. S. Walker and S. C. Allen were admitted to an interest and the firm name was changed to Aldrich, Walker & Co., when they moved to the spacious premises of the Hudson Bay Co., Queen street, corner of Fort, now covered by the Beaver block, and were succeeded in the Makee building by A. S. Grinbaum & Co. of whom more anon.

On the second floor, over the drug store, was the office of D. C. Waterman, Commission and Shipping Agent, representing the interests of sundry whaleship owners and agent of the San Francisco-Honolulu packets, at that time the barks "Yankee" and "Francis Palmer." In the season of 1859 one John F. Pope became the Co. of the firm, a dapper chap that soon became known by the water-front natives as "kala li"—collar strangled, who subsequently moved to San Francisco and identified himself with its mining stock interests.

Captain or "Dan." Waterman, as he was often called, continued the business without change of firm name, and in the latter sixties was appointed consul for Chile at these islands. His end came unexpectedly on the "Moses Taylor" on one of his trips to San Francisco, in July, 1871.

In the summer of 1855 Messrs. C. A. & H. F. Poor arrived here from the Coast and hung out their shingle as Shipping & Commission Merchants at the Everett auction room, corner of Nuuanu and Queen streets. In the fall of 1857 they moved to the second floor of the Makee building, over Aldrich & Bishop, at which place they did considerable business, including the purchase and export of pulu—a product now seldom heard of. With lumber consignments from time to time they maintained a yard on the Manini premises and ran a lively tilt with rival dealers. Mr. H. F. Poor married here in April, 1856 Miss Caroline, only daughter of Wm. French, but died in the fall of 1859 of pulmonary trouble at the early age of 27 years. The firm was dissolved thereby though it continued without change of name for a few years when the elder brother also died and the concern was wound up.

The third floor of the building was divided, the Ewa side to storage use, the Kaahumanu street side being occupied for a number of years by Hawaiian Lodge F. & A. M. till the erection of the first Masonic building, corner of Fort and Queen streets.

For awhile after its completion Captain Makee maintained an office on the second floor till his establishment of the famous Rose Ranch at Ulupalakua, Maui. Identified with him, as accountant, was W. K. Snodgrass, who remained here some time to close up the merchandising business, then joining the Captain on Maui for several years.

Chas. Brewer 2nd, in September, 1857, advertised to let the "Second floor occupied at present by D. C. Waterman; third floor over Aldrich & Bishop, suitable for storage; rear office first floor lately occupied by D. N. Flitner, and rear office on second floor lately occupied by Jas. Makee." Subsequently, on the removal of Captain Thos. Spencer to Hilo, to succeed B. Pitman, Mr. John S. Walker, long connected with Spencer as bookkeeper, opened an office on the second floor as a Shipping and Commission Merchant, and had the agency of one or more Oregon packets, which was the nucleus of the shipping business, foreign and coasting, that developed so prominently under Aldrich, Walker & Co. a little later.

Mr. Brewer (above mentioned) retiring in 1861 from the firm of his name opened an office in this building which he maintained up to the time of his death in June, 1863.

The mauka Kaahumanu street office of the Makee block was the birthplace of Honolulu banking, where Bishop & Co. established, August 17, 1858, a bank of savings and deposit. Its members were Chas. R. Bishop and Wm. A. Aldrich, thus renewing business relations severed but six months before. This partnership continued until October, 1866, when Mr. Aldrich was succeeded by Wm. C. Ralston of the Bank of California, San Francisco. This relationship however was brief as his interest was purchased by Mr. Bishop July 1, 1867. The bank in due time took in the adjoining offices, and outgrowing its quarters necessitated the erection of its own building in 1877 on same street at the corner of Merchant, which it has since occupied.

The late John H. Paty, long connected with this bank, took a clerical position therein quite early in its career, and Mr. Sam'l. M. Damon, its present head, joined its force in its original home September 1, 1870; was admitted to an interest therein September 1, 1881, and assumed control 1895.

The next tenant to succeed the bank was Alex. J. Cartwright, Esq., Shipping and Financial Agent, who moved from his long established quarters over Allen & Robinson's in the "Mahoe" building, near by on Queen street. Mr. Cartwright continued here until the erection of his own office building adjoining the police station, about ten years later.

C. Bolte, Esq. followed Mr. Cartwright's occupancy, and upon his moving to the Cartwright building several years later it was absorbed to the uses of M. S. Grinbaum & Co. who had steadily enlarged their business since first succeeding A. S. G. & Co. to the stand of W. A. Aldrich, prior to May, 1862, till they required the entire building and its adjacent premises on Kaahumanu street. The late M. Louisson (who died in 1902) was long and favorably known in connection with this concern, having been admitted to an interest therein in August, 1866. In 1891 the firm incorporated, at which time C. Bolte was vice-president; M. Louisson, treasurer, and A. Cartenburg, secretary. It became identified with sugar interests on Oahu and Maui, and had branch houses in San Francisco and New York. In 1908 the house retired from business and transferred the agency of their Kaeleku Plantation, at Hana, to Theo. H. Davies & Co., Ltd.

Another noteworthy item connected with the Makee building is, that it was the birthplace of Honolulu's first daily newspaper, the "Daily Herald," which had an existance of eighty issues during the fall of 1866, the venture of J. J. Ayres, formerly of the San Francisco Call. Its office was on the second floor, over Grinbaum & Co.'s store. The paper, though small, and of but short life, was said to have sunk a lot of money.

On the mauka end of the premises there was erected about the year 1855, a two story brick store, with island sand-stone front on Kaahumanu street, quarried from the sea-shore at Waimanalo, Ewa, the "first and only" of its kind till the recent additions to St. Andrew's Cathedral of similar stone from Waianae. J. C. Spalding, followed by Messrs. Krull & Moll were the first tenants, occupying the first floor, though each were but for a short season, as C. L. Richards, Ship Chandler, succeeded to this location in May, 1859. The second floor was used for several years as an auction room by A. P. Everett, M. C. Monsaratt, and others, after which it was given over to warehouse purposes, as in fact has been the whole building till quite recently. Now it is a thing of the past; its walls having been levelled to make way for the enlargement and alteration of the corner building to occupy the entire lot. The changes now in progress are designed to meet the needs of the corporation of Theo. H. Davies & Co., in addition to their spacious quarters opposite on Kaahumanu street; as also on Queen street in the "Allen" block, and warehouses on the Esplanade.

Second, the Canton Hotel (known lately as the New England Bakery), at Nos. 56-60 S. Hotel street, at the head of Bethel street. These premises antedate the history of the Makee block many years, the search for which reveal several points of interest known to but few Honolulans today.

Private journals of early residents and the first newspapers make occasional reference to a "Warren House," and "Major Warren's Hotel," which occupied this same site for about a quarter of a century. It was in the early days of Honolulu that Wm. K. Warren established himself here, for his hostlery is familiarly referred to along in the 'twenties, toward the end of which he is titled "Major." This property appears to have been obtained by him from Kaikeoewa, in 1819, when grass houses predominated, and it would be a wild guess to state when the hotel of civilized life supplanted the primitive structure, but it is fair to assume that it was about 1825 from the fact that it then appears to serve as town hall, or general meeting place for the public to assemble and plan for celebrations, or discuss questions of importance in the community, or serving as a ball room. Reynold records having dined December 31st, 1826, at Wm. K. Warren's on turkey. In November, 1836, it was the scene of "Fortune's Frolic," performance by amateurs from H. B. M. S. Acteon, tickets being issued to invited guests. This was referred to as the "'Oahu Amateur Theatre revived," having reference probably to the crude original theatrical effort here, mentioned in Campbell's Voyage, about the year 1810. So prominent was this Warren name in the community that in 1836, when the naming of the streets was being considered the suggestion was made that "the open space near Messrs. Peirce & Brewer's establishment" (corner of Fort and Hotel) "from Rooke & Peabody's house to Major Warren's old stand be named Warren Square." That this boniface had a winning personality may be judged by the following description of him on his departure in February, 1838: "A gentleman with a smiling visage, a rotund figure, a disposition like a sunbeam, and a heart as big as the Island of Hawaii was Major Warren."

Dr. Ed. Espiner succeeded to Warren's interest in the premises which was reopened and continued for some time without change of name, but we do not find who conducted it. In December, 1840, Espiner sold the property to Wm. French for the large sum (apparently for those days) of $10,000, and the "Warren Hotel" name continued till 1844.

In the summer of that year two Chinese, named Hungwa and Ahsing, leased the premises from French, whereupon Hungwa gave notice of having taken the premises known as the "Warren Hotel" and fitted up the same regardless. This is its first change, for its business card in the Polynesian reads: "Canton Hotel, (formerly Warren House), kept by Hungwa. Billiard Room and Bowling Alleys attached."

Samuel Thompson, one of the town's celebrities (though not in the same vein as his namesake F. W., the auctioneer), succeeded to it in July, 1849, to maintain it as a first class hotel under the same name. His term was brief, for we next find John Bartlett as proprietor of the "Canton" when it was fitted up and became a noted resort for officers of ships in the flush whaling days. "Jack Bartlett," as he was familiarly called, was cash-keeper for many of this class and he served them honestly. Some of our residents may recall the characteristic sign that graced the front of this hotel during the "fifties," the letters of which were designs of human figures in all sorts of acrobatic feats, the artistic work of Richard Gilliland.

Bartlett was a prominent mason and an active fireman; much respected for his probity of character and genial disposition. He passed away here in May, 1858, after a residence of over twenty years. Following his death the "Canton Hotel" was maintained by various parties for several years until September of 1865, when Samuel Loller of the International leased the premises and opened up the same January, 1866, under the changed name of Eureka Restaurant. In the latter half of that year he first had John Grunwald and afterwards J. Collins as partners, with the name changed to Eureka Hotel and Restaurant. By the close of the year he was alone again, but in May following he was succeeded by one Durham Robinson, and Loller's affections were transferred to the old Globe Hotel on King street, which he opened as the Revere House.

For several years nothing of special moment attaches to the old "Canton" premises, nor to the various parties attempting to make a name and fame out of it until in 1878, when it was moved into by F. Horn, the Confectioner and Baker, and this has been the character of the business of these premises until this past year, with but one change of name and interest. Horn's Bakery had an established reputation long before moving to this stand, but after at least three other locatings he fitted these premises up to suit his various lines of business, with the second story as home for his family, all of whom assisted in one department or another. Mr. Horn in his Honolulu experience made more than one honest effort to establish an export business in island preserves of jams and jellies, but he was in advance of the time for that industry. Mr. Horn died August 5th, 1896, but the business was continued by his widow for several years when she disposed of it to others who formed the New England Bakery concern, with Chas. Eccles at its head, but was succeeded shortly afterward by J. O. Lutted, who in due course took over the concern to his own interest, since which time the confectionery side of the business for the trade has been prominent.

All these are now things of the past, and in their stead is Aloha park, a place of entertainment of a different kind.

HONOLULU REMINISCENCES OF 1845.

By Gorham D. Gilman.

HAALILIO.

March 23rd, 1845.—This morning a large ship was seen off the harbor, with her flag half masted. It proved to be the "Montreal," Capt. Snow, from Boston. Mr. Richards came on shore alone, or unaccompanied by Haalilio, and we were soon informed that his corpse was on board, the noble spirit that animated it had long been fled to join the pleasures of another and better world.

It has been a day of grief and sadness. "Aloha ino ia Haalilio.*"

MARCH 26th.—The last earthly honors have been paid to Haalilio. The services have been solemn and impressive. The town has worn an aspect of mourning since the arrival of the remains. The flags have been at half mast, and the natives and chiefs have assumed the sable colored garments. At noon the stores were voluntarily closed by the merchants as a token of respect to Haalilio, and at three P. M. the people being assembled, the procession was formed, a very large number of foreigners coming to pay the last sad tribute to him on whom so many hopes were centered. There was considerable wailing around his coffin, which was covered with crimson velvet, studded with brass nails and devices of plate. The procession was headed by the band and soldiers, a guard being on either side to keep the very great crowd which lined both sides of the road for nearly a mile from pressing on the procession. After arriving at the chapel, Mr. Armstrong pronounced a very beautiful and impressive eulogy on the deceased, alluding to his infancy; his being a companion from boyhood to his majesty; his high office of trust; his fulfilment of it, and his death as a christian. From the church, the procession reformed and marched to the tomb, where he was deposited under a salute, to rest till he shall be called before Him who is King of Kings. His death has blasted many hopes, for he was a general favorite, and many a tear embalms his memory. I remember with pleasure that I was the last white person who shook his hand on his native soil on his departure, and the first to learn of his death as Mr. Richards stepped on shore, though those of course knew it who went on board with the pilot.

OPENING OF PARLIAMENT.

MAY 20th.—A notable day, His Majesty opened the session of the royal parliament with a speech, etc., a grand assemblage of the nobles; silks, satins, etc. were abundant. A new standard was displayed as His Majesty came from his house. The feather mantle and the old spear of Kamehameha I. were carried by Moses and Lot, one on each side of the king. The boys also wore capes made of the feathers. The cloak was used to cover the chair of state which was placed on a platform and called the throne. The nobles were all seated on either hand and the representatives back of them. The house was filled with natives and foreigners to witness this first convocation of parliament in a royal manner. Prayer was offered by the Rev. Mr. Richards. The king resumed his "chapeau" and commenced reading the royal speech, after which His Excellency Gov. Young offered some resolutions which were supported by John Ii and His Ex. Kekuanaoa. On these being passed, His Majesty withdrew, accompanied by his ministers (they came in with him). Dr. Judd, formerly doctor to the Mission, came out with "chapeau" and uniform, walking with Her Majesty the Queen, who was elegantly dressed.

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* Messrs. Richards and Haalilio had been commissioned as Hawaiian ambassadors to the United States and courts of England and France, to secure recognition of the independence of the islands, in which service they were eminently successful.—[Ed.]

The movers of the government are trying to bring forward all the royal proceedings of other countries and make this "court" take a stand with those of Europe. But those who are old and trusted friends are troubled at some of the new measures. May "God save the king" and natives.

DEATH OF KEKAULUOHI.

JUNE 7th.—This morning a loud and mournful wail was heard. It came from within and around the dwelling of Her Excellency the Premier Kekauluohi, wife of Kanaina and the mother of Prince William. She was dead, breathing her last about half past six this morning. She has been ill for a long time, and it was evident that the "Tyrant King" would soon call her away. She could receive no aid from her king to whom she was only second in power, and who called her "Mother." Although it was evident that she could not recover, yet a speedy dissolution was not anticipated. For the last two days, however, she has been more seriously ill, suffering a great deal from pain. Her husband and a faithful servant, with two attendants, were watching with her last night. It became evident to them that the end was nigh. His Majesty was sent for with the other chiefs. He had some little conversation with her. His last remark to her was, "Your time has come, has it not"? She bowed assent and breathed her last. The king bent over and kissed her, and the wail burst forth from those around. Thus died Kekauluohi, once the youngest wife of the old King K. I., and the third premier of the islands in her 50th year.

The last conversation I had with her was on the 1st of May, when I called on her. She was quite comfortable and received me very kindly. I was in her room on the 2nd inst., but she was sleeping so did not have any opportunity of speaking to her. She was always very pleasant indeed towards me. Thus the chiefs drop away; but a very few are left.

CELEBRATION OF THE FOURTH.

JULY 4th.—"The Bright Rosy Morning dawned over the Hills," awakening us to welcome the "glorious day," which, whenever it finds a true son of America, calls forth a song of praise and a prayer of thanksgiving and supplication to the great King of Kings and Ruler over all to "protect us by his might." Thirteen loud peals from the iron mouth cannon gave welcome and remembrance to the original 13 at sunrise. I was engaged in the morning helping to fit up the arbor for the dinner. Called on the chiefs who are entrusted with the care of the royal feather mantle and spears, and had the pleasure of handling and putting them on. I was informed that it was seldom or never permitted but being a favorite it was granted me. The public dinner of *native Americans* who had not forsworn their country was a fine affair, and went off much to the satisfaction of all, except those who were not allowed to participate, such as *naturalized Hawaiians.* Salutes of 28 guns at noon and 21 at sunset finished the day, and fireworks at night completed a celebration which will be remembered with pleasure by all who took part therein.

RESTORATION DAY.

JULY 31st.—This morn brings the return of the anniversary of the "Restoration," the day on which his majesty was reinstated in his regal privileges, powers and kingdom, by the noble and just act of Admiral Thomas, after he had suffered every indignity at the hands of Lord Paulet whose name will live connected with no enviable associations in the history of these islands as long as the people shall inhabit them.

The 31st of July, 1843 was a memorable day, well worth recalling as *one* of the days in our brief existence. The celebration of it last year was on a grand scale, with the roar of cannon, the display of troops, and other manifestations of the joy of the people. This year an entirely different course is pursued. It has occurred to the minds of his majesty and his councillors, that it would be more consistent to remember it with humiliation; to humble themselves before the King of Kings for his abounding mercy in restoring their islands to such unworthy subjects, acknowledging Him as King over all. In this view of the observance of the day, they have appointed that it should be observed as a day of humiliation, fasting, and prayer, for the whole nation, and at this particular season of their affairs I think it is well, for their political horizon is dark with clouds, and they need much the influence of that protecting Power to guide them safely through.

"God Save His Majesty." Amen.

A ROYAL LEVEE.

OCTOBER 30th.—A very pleasant levee was given at the palace last evening in honor of Captain Gordon and officers of H. B. M. ship America, now lying in our waters. The captain and quite a number of his officers are Scotchmen, and with him is a piper belonging, I believe, to his, the "Gordon clan," of which Lord Aberdeen is a member. Mr. Wyllie the secretary of state for foreign affairs is also a Scotchman, or was, and seems to retain all their ardor of national feeling.

At Mr. Wyllie's suggestion Captain Gordon allowed the piper and band to come on shore last evening to play for the occasion, and word was circulated that the doors of the palace would be thrown open to all. I had the pleasure of receiving a direct invitation from Mr. Wyllie and the lord high chamberlain, and of course did myself the honor of attending.

It was half past seven when I approached the house through the long avenue. The palace was brilliantly lighted and presented a fine appearance. The guards were at their posts. The band was playing some pretty airs as I entered, meeting first his excellency the governor, and John Young, with whom I exchanged salutes. Mr. Richards was next, the lord high chamberlain, and others. Passing around I met the young bride of governor Kekuanaoa. She took my arm and wished to enter the saloon, where I escorted her to a seat. From thence, passing into the hall I noticed his majesty seated on a sofa in an anteroom.

The premier was standing in the doorway at the moment and I spoke to him to go and see the king. Taking his arm we walked in front of his majesty, when he (the premier) said in a laughing way in native, "Here is a stranger that wishes to salute you; converse together." Taking a stand by his side I had a pleasant chat of a few minutes, but knew enough not to trespass long at such a time. I next found myself sitting by the side of the lady of the premier, also an old acquaintance. After talking awhile we left the room for a turn on the broad veranda, looking at the musicians, etc. Later I was beside the queen, the prettiest and most amiable of the court. A few words with her, and while the Scotchmen were going through an old fashioned Scotch reel, much to our amusement, I was in the frolic with the lady of the governor and her beau, a protege of his excellency's. The young chiefs were there also, with whom we had some pleasant conversation. In fact it was by far the most easy of any of the levees that have been held, and a large number were present, all enjoying themselves highly.

The piper was the novelty; his "kilts and tartan," his stockings, buckles, arms, etc. were something entirely new to most of those present. It was amusing to hear the various remarks thereon by the members of the court.

I trust not to be accused of egotism in presenting these details, as I do it merely to give an idea of "the ways of the world."

ERRATA.—In the "Chapter of Firstlings" in our last issue under the head of Introductions, the lower paragraph on page 130 relating to Automobiles should have followed Wireless Telegraphy in 1900, the next paragraph, in which year they were first imported, and the date of inauguration of the public service referred to should read March 9, 1901.

Also, on page 132, the year of shaping the Rubber Industry in these islands, in the incorporating of the Nahiku Rubber Co., should have been 1905, not 1895.

HEIAUS: THEIR KINDS, CONSTRUCTION, CEREMONIES, ETC.

Translated from the writings of S. M. Kamakau and others, with annotations.

By Thos. G. Thrum.

NOTWITHSTANDING the shortcomings encountered in the investigations under the above head, we now endeavor to furnish English readers for the first time, we believe, with a full account of the ancient temples of Hawaii in their variety, construction, ceremonies of dedication and worship, so far as can be gathered at this late day. For reasons set forth in the series of "Tales of the Temples," accompanying the list of heiaus throughout these islands, which began in the Annual for 1907, no claim to completeness of the subject is made. It is hoped, however, that further light may yet be found to solve the ambiguity of certain obsolete words and phrases used by the early native writers, more particularly the historian Kamakau, that a better understanding be had of the religious ceremonies he attempts to describe.

In the absence of living authorities on our subject recourse has been had to the early writings of those versed in such matters, of which David Malo, author of Hawaiian Antiquities; S. M. Kamakau, the historian; and the anonymous writer of "Na Hunahuna Moolelo Hawaii" (Fragments of Hawaiian History) as published in the *Kuokoa,* are held to be reliable recorders of the ancient customs, etc. of their race. To these must be added Zeperino, who assisted Fornander in the collection of Hawaiian lore, whose MMS. is now in the archives of the Catholic Mission in this city, to the custodian of which we are indebted for its use for reference on this subject. Of these writers Kamakau furnishes the fullest account, the translation of which is here followed almost literally for the insight it gives of ancient belief and superstition.

HEIAUS: THEIR KINDS.

Heiaus are the sacred temples (luakini), the raised places (unu), and houses sacred to the god, and gods, where human beings were offered up in sacrifice. Men were accustomed to build different kinds of temples (heiau, waihau, unu ([1]) and ko'a) and places of worship to the many gods. All temples were divided differently.

1.—*The luakini heiaus* are large temples which embrace a house of ohia (wood) and a house of lama (wood), and its sanctity (kapu) was of the order of the loulu ([2]), the ohiako and the chief idol (hakuohia). This class of temples belonged to the king only, and were not dedicated ([3]) with pigs, or bananas, or breadfruit, unless when a human sacrifice was offered; then only was the consecration of the temple complete and, hence, were termed temples of human sacrifice (heiau pookanaka). These temples were not built throughtlessly at this or that place, but only on ancient sites unknown except to the temple architects (poe puuone).

2.—*The waihau and unu* ([4]) *temples* belonged to the king, but the chiefs could also build them. The offerings thereat were pigs, bananas, and coconuts.

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[1] No description of the Waihau and Unu class of heiaus have been met with. The fact that this latter term is given to certain temples of platform construction on Kauai and on Oahu, and perhaps on other islands, but is not found applied to those of walled type, would lead to the supposition that these were the distinctive names for these two kinds, but for the designated offerings, referred to in Section 2, which do not include human sacrifices, whereas the severest reputation is applied to not a few of the open platform type of heiau.

[2] Malo mentions two orders of temple ritual, that of Ku and Lono; the former being very strict, the services arduous, and its priests held in the highest rank. The Lono ritual was milder and its priests were of a separate order and inferior grade. He makes no mention of the loulu as an order of ritual . The loulu was a kapu period embracing several ceremonies which preceded the kauila, or decoration day ceremonies of the temple, to which this may refer as it was observed only in those of the luakini class.

[3] The dedication of a luakini occupied from ten to fourteen days of protracted rites of the severest kind, whereas the others required only three days if no delays occurred.—*History of the Hawaiian People, Alexander.*

[4] The mapele (not referred to by Kamakau) is described by Malo as "a thatched heiau in which to ask the god's blessings on the crops. Pigs only were used as offerings; never human sacrifices. Chiefs below the king in rank could construct a mapele heiau, an unu o Lono, a kukoae, or an aka, but not a luakini; that belonged to the king only."

3.—*The temples of the common people* of olden time, (the people who looked after the god; those who worshipped gods; the nightly praying people ;those who continued in daily prayer to the gods), some of these were large temples and some were small. Some were surrounded with a wooden enclosure (paehumu) and others were encompassed with stone wall with only one house within. At the outside end was the terrace or steps, and the stone ledge or platform of offering and the altar where the bananas were deposited. The populace had pig feasting temples. When it became known that an important person was going to observe some sacred festival many pigs were killed, and those of each place who prayed daily to the god were the first to come to partake thereof.

At Waolani, in Nuuanu, was where temples were first erected, because it was there that Wakea and companions lived. There were all the sacred divisions of the temples established, as is told by the people of old, thus:

"Wakea[5] was at Waolani,
Kukalepe[6] was at Waolani,
The paehumu[7] was at Waolani,
The iliili[8] was at Waolani,
The anuu[9] was at Waolani,
The mana[10] was at Waolani,
The halepahu[11] was at Waolani,
The moi[12] was at Waolani,
The kuapala[13] was at Waolani."

This brings in a greater variety than is mentioned by the latter writers, though likely they are more in name than kind from the material of their construction, of which the lama, loulu, and mapele, as also ohia, furnished timber, or covering, or both, which governed their name. The terms of heiau and luakini of "waiea" is also met with, though this appears to have been a small house in four certain temples designated as in Puna, Hawaii; Kipahulu, Maui; Kaunakakai, Molokai; and Makaweli, Kauai, for the performance by the king and high priest of the aha ceremony in connection with the makahiki or New Year's festival.

[5] Progenitor of the Hawaiian race.

[6] Carved idol.

[7] Surrounding image fence.

[8] Pebbled pavement.

[9] The tall kapa covered structure, the same that Malo designates as "lana-nuu-mamao."

[10] House of supreme power; the prayer house.

[11] Drum house.

[12] Principal idol.

[13] Stand on which offerings were placed.

By these things, as spoken by the ancient people, the temple was so constructed, as may be learned by a chant of an old priest named Moi[14], whose temple was Maniniaiake, at Honokaupu, Pelekunu, Molokai, which agree with those things stated as at Waolani.

The ko'a heiaus. Some of these were good sized temples, but most of them were small. Some were set up at the house, screened with a lattice of sticks and sheltered with banana and coconut; others had only a curbing of round stones and a place where the pig was baked and offered, and in offering it, it might be eaten or simply left alone and the oven covered over again with its earth and stones. Others were situated along the seashore, and in the caves along the edge of the cliffs. The principal office of these ko'a temples were for propriating and sustaining the land with a plentiful supply of fish. They had no other function.

The kuula followers (fisherfolk) had many kinds of gods. They built these ko'a temples to Kuula, to Kanemakua, to Kinilau, to Kamohoalii, Kanekoa, Kanekokala and many others. In the same way the ko'as of the streams and fishponds were built. And so also on the bird islands. The people who coaxed and caught birds likewise had their ko'as for the increase of birds throughout the land.

The ipu olono heiaus. These temples, or more properly household shrines, were to foster food. They were of different sizes. Whenever the land was suffering from famine on account of dry weather and parched; or marauders devastated the land; the king would ask what would revive the country and make the plants grow; then those who knew how to recuperate the land would build a house to the god pertaining to rain, and the land would be sure to revive because of the moisture. But these kind of temples to induce rain were rare. In Nuuanu was the rain temple of Makuku, but it was unlike any other temple, having many ceremonies for such service.

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[14] The period of Moi was a long time subsequent to that of Wakea, being cotemporary with Keolewanui of Kamaumau, which was the time of Hakalileo, of Kana and of Nihau and their companions. But Moi preserved the ancient form of the temples of Wakea's time and according to his plans. Into these were merged later the plans of Paao, Makuakaumana, Luhaukapawa, Luahoomoe, Maihea (chief priests) and their companions.

The ipu olono temple that is always maintained by the people is the mua house, the first of the group of several of this and that householder, and in that first house of every man is a calabash (ipu hulilau) suspended by four cords, inside of which is placed food and meat, and on the outside is attached (tied on) a piece of awa. That gourd is termed the gourd of Kuaaha, or the gourd of Lono, and sometimes the gourd of guardian spirits (Aumakua). Every morning and evening the people paid devotional exercises to the god and offered prayer thereto; then the man would take the gourd which would be hanging up at the notched post, or at the side or end of the house, and bringing it to the threshold would take the piece of awa attached thereto and pray to the god for good or ill; for the peace or prosperity of the government; the king; the chiefs; the middle class (hu); the people and the family and also for his own welfare, ending with amen; then he would suck the piece of awa, open the gourd and eat a portion of the food therein. That calabash is termed a poi and meat calabash; it is holy and sacred to the god.

TEMPLE CONSTRUCTION.

The Temples of human sacrifice (*heiau pookanaka*). These temples are very large and are called luakini, waihau, and unu. They were erected along the ridges, on the hill slopes, and at places of safety between the shore and mountains where temples had formerly existed. They were not heedlessly built, and there were many objects for which they were constructed. Some were for the increase of population; some for bettering the health of the people; some were also built for peace, but most of them were built for war, while some were for rebellion against the government. Most of these temples were designed by the architects (poe kuhikuhi puuone), whence came the wars of the times of the tutelar lords of Hawaii, and of Maui, and by these war temples came the numerous human sacrifices and all the sepulchures for those killed in battle and sacrificed on their altars, among which were many distinguished chiefs.

The cause of the death of some of these people in olden time was due to the false schemers unjustly accusing many of infringing the personal kapus of the king, or violating things sacred to the gods, whereby the death penalty would apply, or forfeits ensue. Such was the fear of the people living with the chiefs in olden time. Whenever the king built a heiau pookanaka (sacrifice temple) it was not released of kapu by numerous pigs, bananas, coconuts or other sacrifices and offerings, but only upon the offering up of a human sacrifice would its consecration be complete. Therefore if no culprit or captive was at hand for the purpose, then some cause would be found by one of the favorites of the chief against probably some high or ordinary chief, or may be some intimate friend of the chief. No one was safe or could escape from those jealous fault-finders; even the power of the king could not save his life.

At the council (aha awa koo) which considers the charges against those (falsely) accused, the death penalty decrees are passed at the time they become intoxicated with the awa. The change of attitude in prayer, the knees being firmly placed, or seated squarely so as to bow down alike, bringing the head and body together, if anyone should move, or cough, or choke, or stir through sudden trickery, it was death. In this way were many victims obtained for the temples, and there were many laws by which the country people living with the chiefs were entrapped and led into trouble through ignorance.

Of the building of temples. There were various forms observed in their construction. An elongated square was one form; some were four square; some canoe shaped; others an irregular oval and some circular. The most difficult work in temple structure in olden time was in laying the foundation stones. If the temple was to be built on a precipice, or on a hill, then the stone courses would be irregularly intersected till the highest point in completion was reached. But the refuge temples had not many layers of stone though they required several thousand (mau mano) to complete.

The first thing to do in temple building is laying the foundation, after that is finished then begin the layers of stone. This is the work of the chiefs and sub-chiefs, and if it is very heavy work then it becomes governmental work as applied to the people of the district; not of the whole island. After erecting the walls of the structure and setting the curb of the steps, the six treads are laid smooth with pebbles, as also the floor of the temple and the houses within its area, then the anuu (frame structure) is erected, some being large and high and others low. In the large temples they are about four or five fathoms high, and from three to four fathoms square at the base, affixed with small sticks (ahos) and draped with fringed white kapa. This adjoins the right side of the paehumu (enclosure of images) on the temple pavement, and a small space apart on the left side is the opu[15] where the god stands, a flat place. When everything is ready then the king assesses the chiefs for the images required according to their rank at forty to each high chief, twenty to each subordinate chief and so on to the substantial people; images by the forties, two fathoms in length with about three feet of shaped image, according to kind. Some would be carved crook-shaped, some in notched form, some with grinning mouth, some dwarfish and pot-bellied, others of chunky thighs leaning backward, etc. The principal image on the right side of the (paehumu) enclosure was a male figure and that on the left side was a female figure. This paehumu enclosure surrounding the temple structure was of the carved wooden images; those facing within, the line of inside images, termed Kukalepa, were more carefully carved than those of the outward row, being finished with hair, eyes of pearl shell, and with human teeth, and belted with white kapa. Thus also were the female images dressed with double strips of white and yellow kapa appropriate to this or that figure until all were decorated.

Timber for the houses was next in order. There was the principal ohia (hakuohia), the shady ohia (maluohia), and the aged ohia (ohiako), but the ohia kumakua furnished the temple house timber for mainpost, ridge pole, sills, plates and other wood required in its construction.

The hakuohia was known also as malukoi. In going after the house timber for a temple one's sleep must be sacred, and if the day is good for the service—the air calm, no rain, no thunder or lightning, no rainbow, no feathery pillar, or rolling clouds but the heavens clear, then the god consents to ascend for the hakuohia. The ohiako is barked and carried down, but the bark of the hakuohia or maluohia is sacred, it should not be scratched. The bark of these ohias is not peeled off; else the man doing so dies. And so it is with certain kinds for the idol house. On the day of ascent to procure the hakuohia the king, the chiefs, the people, the priests, and the god keepers with the gods and the drums formed a very large procession. On arriving at the forest belt, or ohia grove, they cleared away the underbrush to avoid injuring the bark of the trees, then the priest offered up a prayer for the setting apart of the ohia, calling upon the gods of the forest thus:

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[15] The Opu is a structure like the Anuu, as shown in the following description of a temple division, found in the *Kuokoa* of July 31, 1869: "Right behind the male images at the altar is the anuu, built about 24 feet high and 18 feet square, enclosed with white oloa tapa tied to the small rafters fastened on all sides of the anuu. This stands on the right side of the house. The opu has the same length and breadth as the anuu, but its covering is of the aeokahaloa tapa, resembling the moeloa, and the small branches of the lama tree at the top looked like hair standing on end. The opu stands on the left side of the house, facing the images and the anuu."

> "O Kaumauna, O Kulono, O Maueleka,
> O Kupulupulu, O Kumokuhaili, O Maueleka.
> O clear the road, O Maueleka,
> Clear the road upward, O Maueleka,
> Clear the road downward, O Maueleka.
> Cut the ohia kumakua, O Maueleka.
> Cut the tree of the tall ohia region, Maueleka.
> Cut the ohia of the large tree region, Maueleka.
> Cut the ohia of the koa region, Maueleka."

and so on.

When the priest and the king reach the selected ohia tree, kumakua, the priest seizes a young pig and causes it to squeal, reciting at the same time the prayer for felling the ohia. Then the king seizes the two famous axes of ancient time from the gods Haumapu and Olopu (said to have belonged to Kahoalii, with which he cut asunder the government that it fell), and touches the trunk of the tree. Then the chief with another axe will cut down the said ohia and trim off its branches to a finish. The young pig, the coconut and the covering shall then be buried at the base of the felled tree, whereupon this and that man shall shout, after which the pigs are baked, the logs cut—the large ones in two or three lengths. And so the fittings for the temple of the luakini class and the houses belonging thereto were given or assigned to all the chiefs, but the sanctum (luakini) is the house of the king and his immediate chiefs.

When the timbers and everything is ready the pig oven is opened up. According to the number of chiefs, priests, image guardians and people so are the number of pigs for the feast of lehua cutting of the temple timbers.

When the feast is ended the fragments remaining, with a human victim, is taken into the forest and at the root of the prominent selected ohia the body, called the "man of Mauhaalelea," is cut in pieces, and all buried together.

As this procession returns, seaward, great fear and dread prevails. No one dares to be seen in its way; all places are deserted; one's life was the penalty should he meet it. No fire was to be lit, nor sound of kapa beating heard. The course of the ohiako procession was still and solemn. The only sound heard would be muffled voices of the company as they give forth these lines, one giving one line and all responding with the next:

"O Kuamu, O Kuamu, be silent.
O Kuawa, O Kuawa, consider,
Shout forth the victory, shout, shout,
Confuse their defeat; flee, flee."

Thus the crowd mumbled along until they entered the temple enclosure, conveying the ohia log to the pavement of the temple. Its sanctum is then erected. Some of the temple houses are of ohia thatched with grass, others of lama with lama leaf thatch. In covering some of these houses they used kapa cloth, or banana, or other bark inside and out, over which would be a covering of lama, or of lehua leaves, according to the character of the house in its purposes in the temple. They were situated to be connected one with the other, some being back to back leaning toward the scaffold structures the anuu and the opu hiwi. There are four or five houses in the temple. The mana house is the most sacred, where the chief idol (the Moi) is. The house of Kamauliola[16] is in front of the anuu, the place where the prayers (aha kai)of the king and priests are offered. Between the mana and the drum house stands the altar for burnt sacrifices and wave (mohai hoali) offerings[17].

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[16] Another term for the idol house.

[17] The description of temple divisions given here and on page 59 differ materially from those of other writers, and taking into consideration that hardly any two heiaus in all the islands are alike it could not

RELIGIOUS CEREMONIES.

At the (kuaha) altar below the chief idol within the mana house is burnt the sacrifice for atonement and cleansing. All the services of the temple are sacred and fearful. The drum house where the priest officiates is where the large drums and the small drums for joyousness are. There too are the image bearers who cry continuously all night in prayer, from evening till morning dawn.

When the houses within the heiau are finished, they are then provided with needed outfit of the night praying attendant priests, such as robes, ninikea and red malos of the oloa and wauke kapas, with cloth for the houses, the scaffold structures anuu and opu, sash cloths of various kinds of kapa appropriate to the different images, with a sprinkling of colored leaves, ieie, and evergreens to decorate the altar that it impress one with awe on first beholding it. The supply for the temple consists of pigs, coconuts, garments, bundles of oloa, mats, red fish, and kukui torches, each by the 400, and when these offerings are complete then at dark the continuous night prayer and crying aloud commences. In the afternoon the pigs are baked for the house of the god (as the house warming).

It is the fixed law of the priests and the nightly and day prayer bands that their hair be not cut but tied up on the top of their heads, nor their beards plucked but hang down on the breast. Intercourse with women is interdicted, nor can they associate with those of their household. They are kapu to any dead body, human or animal, and to unclean women, so that from the time the night prayer band of priests enter the temple they are sacred to the solemn services of the god, and for which they shall first be cleansed and purified. Whether a few days or a month, they shall not return to their dwellings, excepting the high priest, he only resides outside of the temple, and enters it only upon nights of important ceremonies.

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well be otherwise. Malo says, "the plan of the luakini was such that if its front faced East, or West, the lana-nuu-mamao would be at the northern end. If it faced North, or South, the structure would be located at the eastern end." Zeperino is the only one who shows a diagram of temple divisions, which differs from the others, but neither one enables us to clearly understand the varied and interesting outlines of the best conditioned of the ruins yet remaining.

The mua house is the largest in the temple enclosure, and stands lengthwise. There is cooked the pigs for burnt and sin offerings and other sacred ceremonies for the altar sacrifices to the god.

The offerings; that is, the pig, shall be only those in good condition and fattened till the nose is rounded up, the neck full, the ears hanging down, and the mouth like that of a domestic fowl. The god cannot accept inferior offerings. Three, four, or five pigs are prepared the evening before. The king and the high priest, the chiefs and favorite friends enter together at this feast of sin offering. Throughout that night the night prayer, priests and day prayer corps chant prayers in low sonorous voice, tremulous and faint at times, then again as the sound of a drum. Thus is the crying out day and night, and if the night prayer kahunas perceive that their petitions terminate without meeting any obstruction during their rendition then on the following night the service shall devolve upon the high priest with the king.

At sunset begin the duties pertaining to the ceremonial procession for the next morning brings the great day of decorating the idols, and placing burnt offerings on the altar. The night of the procession the king, the chiefs and their attendants, all are kapu. Men and women shall not sleep together nor shall unclear work of any kind be done; everything is very sacred and solemn. If the processional services are unsuccessful they would be repeated, and should the same failure occur then immediate search for the party causing it would be made. The elder of the god keepers would take the images out to search for and point out the transgressor. If the procession was for Kukeoloewa, then Kukeoloewa was the god to find and point out the guilty party. If the procession was for Kuhooneenuu then it would be the god taken out for the detection of the guilty one. And so also if Kukailimoku's was the procession thwarted the king would be the one to take it, or if not him, then the god keepers, but it was customary for the king, with some attendants to accompany the god to discover the transgressor. Sometimes the king would sanction the desire of the god for his death though occasionally a love for his subjects would possess the royal heart. Not so those under him; they were quick to punish the guilty so as to secure an honorable name in carrying out their master's word.

There was but one penalty. If the guilty party was discovered by the spies on procession night, they became victims for sacrifice on the altar. Being a chief, or a favorite of the king would not save him, though one thing is said, that no priest's man, or any of his favorites would be sacrificed.

If fire was the cause of the procession's failure and that procession was on Oahu here, for instance, and the fire was on Molokai, that fire would be extinguished by the prayer of the priest. When Kualii was dedicating the temple of Alaala, at Kailua, Oahu, a fire raged from the gap of Kaluakoi to Kalae, Molokai, for five days until the night of the procession. The king was troubled in mind, therefore, he told the high priest of Heeia of the failure of the procession which he attributed to the lurid sky caused by the fire. The priest replied that he, the king, had the power to continue or extinguish the fire, for if you say to put it out it shall be so. "My wish is that the fire cease, so that the procession of the house of the god may be perfect," said the king. Then the priest prayed to the god and the fire ceased and the procession service was successful.

It is said by Puhiea that when Kamehameha consecrated the temple of Hapuu, at Halawa, Kohala, he also was present. A fire raged at Hana, Maui, for two days which reached from Puuiki to Koali. On the third night, the time for the processional service, the fire was very bright, and because of Kamehameha being excited thereby the procession failed, so he commanded the priest to pray to the god to extinguish the fire, and while so doing a heavy rain fell and quenched the flames. That was in 1802.

When the high priest and the king enters the luakini for the processional services of the temple, the priest is robed in white ninikea[18]; a flowing draped garment with ninikea flap behind and a white turban on the head, while the king is robed in red from head to foot. That would be his apparel generally, though at times he was privileged to dress differently, but not so the priest; he changed not from white robes.

The most sacred place, termed most holy, was in the mana house where the king would stand and where the image of Ku would be set up. Ku was thought to be the god of the procession, but the figure seen by man was Kuhooneenuu, Kukeoloewa, Kukailimoku, or Kukalaniehuiki. These were images covered with downy breast feathers and with a notched helmet (mahiole) curved to fit the head. This peculiar feather is not found on Hawaii, but is said to belong to Halulu and Kiwaa, and are considered very sacred.

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[18] Much conflicting opinion prevails among present day Hawaiians as to the peculiar kind of tapa here referred to, but a reasonable rendition of the term "ninikea keokeo" is given as "pure white." "Nini" having occasional use in connection with tapa marking or pattern, as "ninio—to spot; to print, as tapa," it is likely that the special white garments of the priesthood, including the malo, was of a white pattern beaten quality in contradistinction to the printed pattern on a white ground.

When the priest was engaged in earnest and solemn prayer it was stillness itself. The high priest and the king were the only ones in the holy place. The king could then see the benefit to him of prayer as the words uttered by the priest filled the royal heart with gladness. Not a squeak from rat, nor sound from lizard or cockroach disturbed as they came out in front of the scaffold (anuu) between the idol house (kamauliola) and the space by the row of female images noted for their miraculous powers. No sound from bird, hoot from owl, yell from sea-bird, or quack from duck, nor reflection in the heavens of ignis fatuus; no twisting clouds, no shooting stars, no thunder or lightning; there stood the priest with stepping of the feet praying in a loud voice, and when he ended the prayer and the king said amen, it was truly so. The priest asked "how is my prayer"? "It flies away," replied the king. (It is finished).

As the rows (na waa) of people of the procession outside the enclosure sat still, there was no sound or noise heard, nor cough or voice among them till they heard "It is finished," then, with one accord loud voices broke the stillness and it was taken up by the multitude beyond the temple precincts who echoed "It is finished,"—whereby those at the houses heard the success of the midnight processional ceremonies. At daylight the celebration would begin. This important service was one of sacred solemnity, with oppressed mind for the death penalty that prevailed during its ceremonies if its holy laws (kapu laa) were infringed. Nothing could save one. But it was better that one should die than that hundreds or thousands should fall in battle. If a house for the god on account of war, or to ward off devasting sickness, or pestilence, or other ills befall the people, or for pardon for misdeeds of government or people, the atoning victim is entitled to holy service that he would be a sufficient sacrifice to appease and satisfy the god. And so it is with temples for the good of the government and people.

THE HONO SERVICE.

The day of great sacrifice. This occurs the day following the successful night of processional ceremonies. That is Kane's sacred day, Kane being the chief god worshipped, and is observed and called the "kapu of Kanehonohokapaa," which is the hono (a service wherein every man must hold his hands in a peculiar posture).

The day of great sacrifice is one of sacred solemnity. Decorations of tree branches and evergreens are brought from the forest into the temple (luakini heiau), the place of worship, and the dead body is moved to the holy and most sacred place during the prayer. There are the god keepers with the images in their hands amongst the assembly and lines of images, and row of priests underneath the altar. The row of hono observers stand directly under the scaffold (anuu), turned toward the mana (house) and the altar, and in the space between the former and the leaf-thatched god house (kamauliola). The people of this service are those cleansed for sanctity of participating in the wave offering and witnessing the solemn burnt sacrifice ceremonies with dread and fear, the king and those akin to him, the chiefs, and the bosom friends of the king.

The hono ceremony. In this ceremony the assembly sits in two rows, one behind the other, fronting the king and the high priest. The participants take their places in line with the king and high priest by the door of the mana (house) directly facing the altar. Each one of this company must sit perfectly still, his seat firmly fixed, the body in a bending attitude, with the left foot thrown over the right foot, that being the position. Also, the palm of the left hand is placed over the palm of the right hand. Some one of the priests would then call out "Put up your hands," when, with one accord all would raise up the right hand, pointing at the same time to the god in the heavens, keeping in mind however the commandments on pain of death. The people would then pray in unison. Those who knew the prayer would repeat it together, occupying over an hour in its delivery, with the arm raised and the hand bending downward, without movement of the body, until the burnt sacrifice was brought to its place. If the sacrifice be the body of a vanquished chief then two pigs are brought with it, which are roasted together in the fire; also, bunches of bananas and coconuts. Then the king would step forth and seize the line to which is attached the famous hook Manaiakalani affixed to the mouth of the captive chief, through war it may be, or other person, and pray thus:

"O Ku, O Kunuiakea, O Lononuiakea,
O Kanenuiakea and Kanaloa,
Here is the present, the sacrifice,
A choice collection, a royal ornament,
A rebel to country, a land grabber.
O curse those rebels without and within
And to the land grabber too.
Preserve me as the mainstay of the government
And all the chiefs,
The middle class of the people,
For the government from end to end;
Amen, 'tis free. 'Tis finished."

When the king ends his prayer two men come forth to their duties pertaining to the government and the king, one representing a highest chief (Niaupio), the other a traveled seer (Kaula) for the government, bearing coconut leaves. These leaves, with the fibrous product of the tree, braided pointedly, were taken and stood one at the right corner and one at the left corner of the scaffold structure (anuu). Here they stood holding up their coconut leaf with the right hand while the first one uttered the service prayer, thus:

"A prayer of Ku, of Lono, of Kane, Kanaloa,
King through rebellion, or land grabbing,
With pointing hand and nodding head,
Accept all such in sacrifice."

As the one at the right corner of the scaffold ceased and fastened his palm branch, the second replied in prayer and did likewise. Then the first one edged up to the second corner and repeated his prayer which was again replied to. When all four corners were decorated with fluttering palms and the structure draped with white kapa (oloa) it was proclaimed in the center. Then these two men stepped forth and danced while the sound of the drums and voices of the priests in the drum house were heard in prayer, * * * at the end of which the two performers ceased their dancing on the structure. The offering was now ready to be eaten; the pigs of the wave offering, cooked, were placed on the platters in line on the pebbled pavement. The pigs of the priests and godkeepers were different from those of the king and chiefs. When the feast was ready the high priest prayed first on the right side of the king's pig; then proceeded to eat as did also the king, the chiefs and all the participants of the hono.

The burnt offerings were placed on the altar, the human sacrifice and the pigs. They were laid lengthwise face downwards, the hands of the man clasping the pigs on the right hand and on the left, and on both sides were placed the bunches of bananas and coconuts. All were laid alike with the head toward the mana in the structure. If ten men were offered up in sacrifice upon the altar so also would be laid the pigs side by side of the men. When burnt offerings were placed on the altar there they remained till the flesh fell from the bones.

No uncondemned person was offered up, nor were all temples for human sacrifices, but there were many kinds of temple restrictions.

KAPU LOULU CEREMONIES[19].

An account in connection with religious ceremonies at the Papaenaena heiau, at Diamond Head, in the days of Kamehameha, will show somewhat the severity of the kapu loulu.

"While the queen mother lay seriously ill the time of observing the kapu loulu was near at hand. The king and the heir had been living apart from the queen ten days. Thus all the chiefs separated from their wives and lived at the Leahi temple during that period, devising a policy of peace and prosperity for the kingdom. At that time three men were arrested for eating coconuts with the queen, a tabued article for women, as also the partaking of food at the same table with men. These culprits were placed in custody of the keepers of the idols and condemned to death, a doom deemed honorable in those times, and were thus kept till the day of execution. There were many other strict ordinances whereby violators of the kapu loulu were put to death.

"On the great kauila (decoration) day of the temple the king and the three princes, the chiefs, priests, the idols and their keepers assembled for its observance, and the priests whose duty it was to pray did so with much verbosity, repeating it as a chant. If the service of the aha on the previous night was successful, when it comes to where they respond together the fire of the imu (oven) is kindled, then the hogs and the condemned men for the sacrifice are killed. The bodies of the law breakers are scorched with fire in the same manner as are the carcasses of the hogs, and are conveniently placed where they can be offered up as sacrifices in the presence of the king, and priest, and attendant worshippers and rows of image bearers.

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[19] As found under head of "Hunahuna Moolelo Hawaii" in *Kuokoa*, August, 1869.

"The King it is said was indisposed during those days and was heavy with sleep at the assembly. They gathered at the drum house where the drums in honor of the gods were tapped by the guardians every morning at dawn, and it was also said that they were beaten when the king did not offer up the concluding prayer, amama. * * *

"In the small house called 'Waiea' is where the king and priest performs the aha ceremony (seeking a favorable omen as answer to their petitions), between midnight and cock-crow. If it should be auspicious and the king expresses satisfaction at the priest's effort the congregation shouts 'lele wale ka aha e!' All attending the loulu service and who understand the ceremony are happy at its success for on the following day baking hogs will be the business in hand.

"Respecting the aha there are two rituals, viz. of Ku, and Lono. If the aha ceremony is Hulahula, that relates to the service conducted by the priests of the order of Ku, (moo Ku) and such service belonged to the luakini having its paehumu, posts, and rafters of ohia wood only, and the priests of that order claimed from Kanalu, to which class was Hewahewa and companions. If the ceremony is Hoowilimoo, that pertained to the order of Lono (moo Lono), and was of milder form. There are several ceremonies pertaining to the kapu loulu; four principal services, ending with a fifth at the Hale o Papa outside the temple proper, which last service releases the kapu when everyone returns to his home save the guardians of the idols.

"The ceremonies pertaining to the Hulahula aha, which is the first tabu service observed, are attended with fear and trembling. They were always conducted at night and for that reason the children and loved ones were carefully guarded because of the ulua catching priest who is out on duty to waylay, entrap, and kill anyone, whether man, woman or child he might meet, to bring before the kapu loulu. On his going out and in his returning he mutters his prayers continually, and is not to be disturbed by talk or noise of any kind. And if successful in his quest and not having met with any obstacles the aha is deemed propitious; the omen is favorable to the government as to peace or war. That is the nature of a kapu loulu. But to resume the account of the Leahi heiau services.

"While the king (Kamehameha) was lying down, the two elder princes were sitting on either side of him, and it was generally expected that the concluding prayer, amama, would be recited by one of them, but the king was not so disposed, for as the priests ceased their petitions and waited for the amama, the king asked 'Where is the young prince'? 'There sitting on the lap of Keeaumoku,' replied some one. 'Tell him to repeat the amama to the god,' said the king. And the prince (Liholiho) arose and going forward, stood before the platform where the sacrificial hogs, the human sacrifices, coconuts and bananas were placed and repeated the formal closing prayer, at the end of which he returned and resumed his seat in Keeaumoku's lap. Great was the joy of the assembly, as also the king, but Keeaumoku was exceedingly gratified because his royal ward had uttered the prayer without a mistake. * * *

"Before the assembly was dismissed and the prince had seated himself, two men came forth, each holding two coconut leaves braided with the husks of the coconut and entered the space in the middle of the anuu and commenced their service of decorating its four corners" (which was carried through as described on page 67).

"Another observance is as follows: The feather idols together with Kahoalii and the one who holds the kapuo stick[20] stand in a row at the head of which is the kapuo herald. Next to him is the god Kahoalii, then the feather idols, and at the end of which is the akua 'panauea'—because of its slowness. These images are all borne by their guardians. The one who carries the kapuo stick and heads the procession is the one interrogated by the party of the first division[21]. Before the procession moves the priest of the lama service first stands up and strikes five or six bunches of hala (pandanus) with his stick, splitting them and causing the fragments to fly among those seated in rows (noho waa kauila), creating much amusement among the onlookers at the dodging of heads to avoid being struck and hurt by the particles.

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[20] A stick borne by the herald in proclaiming tabu (Kapu-o).

"According to the regulations of this service, already made known to the participants, the one having the kapuo stick turns to his left in front of the row between the image bearers and the priests standing before him. Thus the procession moves till it reaches the place where the first one of the row had stood when it turns again and moves to the left, still in single file, and so on to the end of the processional service. But the feather god 'panauea' walks very slow. There are two men in the procession who have no regular malo, viz., the herald carrying the kapuo stick, and the one who represents Kahoalii. This latter has only a slip of white kapa suspended before him, and he walks with his knees bending outwardly until he catches up with the man bearing the kapuo stick and also the panauea god which was on his left, and he continues walking in that manner till the others make a turn. The panauea god, moving very slow, designedly, to just reach the point of turning allows his companion to catch him in compliance with the regulations of the service. And when they reach the spot where the leader had first stood, the procession comes to a halt, each one standing in his order, while the panauea god passes slowly along before them till he reaches and stands in his first position.

"While the idols were standing in a row before the priests the latter would shout out unitedly to the panauea god various ceremonial questions relative to Lono, and Kamehameha. The person addressed is supposed to be an assistant high priest of the order of Ku, and the appropriateness of the replies as also the neatness of the processional service drew forth commendation.

"At the conclusion of this ceremony the one who chants for health, or life, stands up and exclaims, 'Oh Ku! Lift up! Give life!' Then all the assembly that had been seated under the lama branches stood up and shouted together, whereupon the people were released and each went to his home without disturbing the sacredness of those who kept the kapu."

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[21] This clause is obscure, but probably refers to the officiating priest.

ASCENT OF MOUNT HUALALAI.

Extract from A. Menzies' Journal of Vancouver's Voyage 1790-1794.

BRITISH MUSEUM, MSS. DEPARTMENT.

[This is said to be the first time this account appears in print.]

BEING very desirous of examining the mountains and interior parts of the island [Owhyhee] for plants and other natural productions, and particularly for making a good collection of seeds to send home for His Majesty's gardens, by the "Dœdalus," I this day, January 15, 1794, consulted with Tamaiha-maha for that purpose, and he not only complied with my request but very obligingly promised that I should be attended by a chief who would have sufficient power to protect me from any ill-treatment and provide whatever provisions and other attendance I should want in my journey; but before he could give the necessary orders he wished to know what part of the island I meant to visit; then I told him that I proposed to ascend, if possible, a considerable mountain, of a conic form, called Wharárai (Hualalai) situated a little to the southward of Toehah (Kawaihae) Bay. He then fixed on a chief named Harou, who had the charge of his own plantations at the village of Hanuaoora, on the seaside, near the foot of that mountain, to which place he advised me, as the best mode, to go by water, in one of his canoes, and that there I should be supplied with everything necessary for the journey.

Harou being at this time alongside of the ship, he called him in and gave him a most solemn charge of me and everything I should carry with me, declaring to him that he should suffer most severely if I should have occasion to prefer any complaints against him on my return.

The business being thus settled, Tamaiha-maha turned round to me and asked for the use of my cabin while I should be away, and though I strongly suspected that he only wanted it for intriguing with the ladies, yet I delivered him the key of it when I left the ship, with which he was highly pleased.

While I was preparing for this journey W. Swaine and two or three of the midshipmen proposed to accompany me, and I was very happy in having the pleasure of their society. W. Howell also expressed himself to the same purpose.

Everything being ready, we set out from the vessels in the forenoon of the 16th, in company with Toomotoo and his wife, in a large double canoe, followed by Harou and our attendants in another, and as we were passing the village of Kowrowa (Kailua?) we were joined by Mr. Howell and his attendants in his own canoe: after this we proceeded to the northward, close along shore, for about four or five miles from Karakakooa (Kealakekua), when we entered a small cove surrounded by a scattered village belonging to Teamotoo, called Teawho. In this cove we saw the American schooner which the natives had captured, belonging to Mr. Metcalf. She was secured and housed over to preserve her from the weather, but we did not examine her condition very closely, for fear of giving offence. They told us that she made a great deal of water which they were obliged to pump out daily: otherwise she would sink.

The reason of our putting in here was at the earnest request of Teamotoo and his wife, who were desirous of my visiting a sickly son of theirs about 25 years of age, to administer, if possible, to his relief, but I was sorry to find him so far gone that it was not in my power to be of any real service to him, for he was so emaciated, low, and hectic that it was not likely that he would survive many days. This deplorable state was occasioned from a wound he received about two or three months ago, by a spear which entered the side of his neck a little above the right clavicle and took a slanting direction downwards, on the inside of that bone: from that wound there was now a very copious discharge. What rendered the case still more distressing, this wound was inflicted while he and another man were throwing spears at one another in the way of exercise and diversion, yet for this mere accident the man who hove the spear, being a common person, was put to death.

We met here a seaman, who had landed some time before, from an American vessel, and as Mr. Kendrick had no coal for working his forge on board the "Lady Washington," this man employed himself in making charcoal for him up in the woods, and he was laying up a store for any other vessel that might touch here and be in want of such an article. This was an useful hint for the natives, not only in working up their own iron with greater facility, but likewise as a new article of traffic, of which they eagerly availed themselves, for, on our coming into Karakakooa Bay this time we were quite surprised to see the natives bring alongside of our vessels quantities of charcoal to dispose of.

This man chose a delightful situation for his dwelling, which was kept neat and clean, and from which he had a commanding prospect of the village and cove underneath him, of a large extent of country on both sides, and of the boundless ocean before him. We dined with him on roasted pork, roasted fowls and vegetables in a very comfortable manner, as he had taught the natives who attended on him to cook his victuals in the English style, and after dinner we entertained him with a glass of grog to which, he said, he had long been a stranger. This induced us to spare him a little of our stock, at parting, when he gave us an earnest commission to send him some more and likewise some tobacco as soon as we returned to the vessels.

After condoling with our friend Teamotoo on the deplorable condition of his son, we took leave of him when he earnestly requested that if we should chance to pass through any of his plantations, to demand in his name whatever we wanted, for which purpose he sent with us a person duly authorized. We understood that his daughter—the queen—had arrived this day at an adjacent village where her mother went to receive her, but neither he nor we had yet seen her.

In the cool of the evening we embarked with Harou in one of the king's large double canoes, and proceeded along shore to the northward till we came to Taitahooa Bay in the bottom of which we landed, in the dusk of the evening, at the village of Haunaoora, under the noisy acclamations of a numerous group of men, women and children, who expressed their joy by singing, dancing and capering before us in such a frantic manner that it was with great difficulty the chief could clear an avenue through them while he conducted us to a large house belonging to Tamaiha-maha, which we were happy to find was within a tabooed space, so that we soon got clear of their teasing curiosity, and enjoyed our evening's repast and night's repose in quietness; but the chief himself was up the most part of the night, preparing for our journey, as we were next day to begin our ascent, and as it was likely we should be some days in the mountains it was necessary to provide provisions of every kind, with a quantity of cloth and mats to lie on at night, and men to carry the whole, so that the collecting and arranging of these matters was a weighty business on Harou's mind.

As I was desirous of ascertaining the height of the mountain we were going to ascend, I brought with me, for that purpose, a kind of portable barometer, for which I am entirely indebted to the liberality of Col. Gordon at the Cape of Good Hope. That gentleman hearing, when we touched there, that we had no portable barometer on board, for ascertaining the height of any mountain that might be ascended during the voyage, presented me, in the most generous manner, with his own, which he had long been in the habit of using in the interior parts of Africa, and which had travelled with him, in his interesting journeys through that country, for many, many hundred leagues. The simplicity of its contrivance, and the ease with which it was carried and managed may probably render it preferable, on such occasions, to a more expensive instrument, which in ascending pathless rugged mountains is so liable to be broken. I shall therefore subjoin a short account of it, and the manner of using it, leaving the reader to judge of the probable degree of accuracy of the observations made with it at different heights both in this and the subsequent journey to the summit of Mowna-roa.

It consists of a simple straight glass tube about three feet long, filled with mercury which is secured by a small stopper and a piece of soft leather tied over the end of it. This tube, together with a brass scale of about the same length, divided and subdivided into inches and tenths, are carried in a small wooden case lined with cloth where the scale is fastened, but the tube has a little play, and a few ounces of mercury is to be carried in a stone or wooden bottle which completes the apparatus.

For observing with this instrument the mercury in the bottle is to be poured into a small open cup; after the stopper is to be taken out of the tube: the vacancy in it is to be filled up brimful with mercury: then, with a finger placed over the mouth of the tube that end of it is to be inverted into the mercury in the cup, taking care not to withdraw the finger until it is well immerged. The mercury in the tube will then instantly fall down to its proper height according to the pressure or weight of the atmosphere on its external surface at the time and place of observation, and all that is further necessary to be done is to hold the tube upright and to measure with the brass scale the exact length of the column of mercury in the tube, above the surface of the mercury in the cup, which will give the true height of the barometer at each station.

I had but only one tube which I was fortunate enough to preserve whole in my different journeys, but to guard against accidents several of these tubes may be loosely packed in the same case by rolling each of them up in a piece of cloth, and it is almost needless to observe that in carrying them the stopper ends should be kept uppermost. This case may be slung on a man's back and carried with ease and safety over the most rugged mountains.

On the morning of the 17th we had a good deal of difficulty in getting the party ready and in collecting together the provisions for the journey, which consisted of live hogs, poultry, taro, yams, coconuts, and dried fish in quantities that loaded upwards of twenty men, but it was hardly possible to ascertain the number of carriers attached to the party, as they were sent on before and in different directions, to collect their loads, with orders either to follow us or meet us on the way.

There were others appointed to carry our luggage: one carried a kettle, another a gridiron, and a third from the nature of his office might be termed a butler, as he carried and took charge of our liquor case. Among other appointments we found that each of us had a man whose sole business it was to carry the cloth and mats for sleeping on, spread the couch at night, and roll it up again in the morning; in short there was no end to these various appointments, where the claim-ants for service were so numerous. Many of them, however, were unwilling to load themselves but merely took some little thing or other that they might be considered as belonging to the party, and by that means be allowed to accompany us, and there was no possibility of making any retrenchments respecting them while we were in the midst of such bustle and confusion, and surrounded by such a numerous crowd of the natives. We therefore set out in the forenoon, in the best manner we could, for the mountain of Whararai, which was directly back from the village, but before our departure I observed the barometer close to the seaside where I found it stood at 30.10, and the thermometer in the shade was at 81 degrees.

We commenced our march with a slow pace, exposed to the scorching heat of the meridian sun, over a dreary barren track of a gradual ascent, consisting of little else than rugged porous lava and volcanic dregs (a-a) for about three miles, when we entered the breadfruit plantations, whose spreading trees with beautiful foliage were scattered about that distance from the shore, along the side of the mountain, as far as we could see on both sides. Here the country began to assume a pleasant and fertile appearance through which we continued our ascent for about two miles further, surrounded by plantations of the esculent roots and vegetable of the country, industriously cultivated, till we came to the uppermost village consisting of a few scattered huts where we were importuned by our conductor, Harou, to take up our abode for the night, and although it was early in the afternoon and we were impatient to go on as far as we could with daylight, yet we were obliged to comply with his request, as he wanted, he said, to muster his party and make up any deficiencies in our stock of provisions before we quitted the plantations: it also gave him time to send messengers back to Hanuaoora for whatever was forgot or wanted. From this place we had a delightful view of the scattered villages and shore underneath us, and of the luxuriant plantations around us, but a thick cloud enveloped the mountain and woods above us, from which, in the evening, we had some light, refreshing showers of rain.

Next morning the clouds dispersed and we had a fine prospect, over the woods of the naked peak of Wharárai, which did not appear to be further from us, in a direct line, than the village we left behind at the seaside. This gave us fresh spirits and we set out pretty early in expectation of soon accomplishing our object, in gaining the summit of it. After going on about two miles, by a narrow path, through an uncultivated track overgrown with ferns and small bushes, we entered the forest, the verge of which was adorned with rich and fruitful plantations of bananas and plantains, from which we supplied ourselves with a good stock for our journey: we then penetrated the wood by a winding path so narrow that we could only follow one another's track. In this manner we proceeded for about three miles when we came to a resting place, where we kindled a fire and breakfasted, and here I observed the barometer about nine in the morning when I found the mercury stood at 27.35, so that it had fallen by our ascent, since it was observed the previous morning, 2.75, which gave our height at this station about 2600 feet above the level of the sea. The thermometer, which was observed at the time we set out in the morning to be at 81 degrees, was now at 59, which showed that we had already changed our temperature of climate 22 degrees from what it was at the seaside.

Having rested ourselves a little after breakfast, we proceeded on our journey by the same circuitous path, in the woods, for about eight or nine miles, according to our estimation, when we came to the termination of the path, where we found a small hut that appeared to have been lately occupied by some of the natives, who had been thus far up the mountain, felling of trees and shaping them out in the rough for canoes, planks and other purposes, and as it is always necessary to make a path for dragging these down to the seaside, this appeared the furthest extent they had yet penetrated up the mountain for timber. Here we were advised by our guide to stop for the night, as many of the party who were under heavy burdens, he said, had lagged behind and were so tired that they could not proceed further without some refreshment and a night's rest: besides, he assured us, we were near the upper edge of the wood and would with ease reach the top of the mountain next forenoon. We therefore staid, though the afternoon was not far advanced, and as the party collected they, in a short time, erected a village of small huts to shelter themselves and us comfortably for the night.

Since we entered the wood in the morning our view was limited by a continued dense forest of trees, bushes and tall ferns on both sides of the path, that we saw neither the sea nor the mountain, though the day was quite clear and serene all the time. In many places we found the woods had been thinned by the natives having cut down the larger trees for various purposes; this afforded me a good opportunity to botanize as we came along, by keeping several of the natives employed on both sides of the path in bringing me branches of whatever tree, bush or plant they could find either in flower or seed.

We observed here and there in the path little morais, pointed out by taboo sticks stuck in the ground round a bush or under a tree: in passing these places the natives always muttered a prayer or hymn and made some offering, as they said, to their Eatooa (Akua) by leaving a little piece of fruit, vegetable or something or other, at these consecrated spots; even in the distant solitary hut we found a corner of it consecrated by one of these taboo sticks which the natives earnestly requested us not to remove when we took possession of it, and we very strictly obeyed their injunction, conceiving that religious forms, whatever they are, ought to be held equally inviolable everywhere, for the untutored savage in worshipping his god in a gloomy forest may be equally sincere in his prayer, and derive equal consolation from his religion, at the awful moment of dissolution, with the enlightened European who habitually bends his knees before the rich altar and offers up his devotion in a splendid temple.

Finding we were so near accomplishing our object, a messenger was despatched to Karakakooa, at five in the evening, to make our progress known at the vessels and to bring from thence some little things we wanted to render our situation more comfortable on the mountain.

In the evening the thermometer stood at 58 and I was at first much surprised to find the temperature so nearly the same as it was at the lower part of the wood in the morning, though we had ascended since that time upwards of 4000 feet in perpendicular height. It is probable that this might be owing to the strong and constant exhalations from the forest in the daytime, which by keeping up a cool fanning air amongst the boughs of the trees might tend greatly to diffuse the same temperature even at different heights throughout the woody regions of these mountains, but when this cause ceased at night and a heavy dew or small rain produced a contrary operation amongst the aggregate assemblage of vegetables in these forests, the temperature next morning was found to be very different, for the mercury in the thermometer was found to be as low as 43 degrees at half past seven, which showed a difference of about 16 degrees between the extremes of what may be termed the temperate zone of these mountains; hence it appears how necessary it is to attend to different circumstances in drawing conclusions from meteorological observations.

As our curiosity was so much upon the edge and our anxiety so eager to gain the summit of the mountain, we set out pretty early on the 19th, even contrary to the wishes of our guide and the rest of the natives, who, notwithstanding large fires being kept up, were continually coughing the whole night, and complained so much of the cold that they were unwilling to stir till the day advanced, and well they might, for besides the effect of the damp, chilly air of the forest we had already changed our temperature nearly 40 degrees, by the thermometer, since we set out from the seaside in the space of little more than as many hours.

The forest here being thinner and less encumbered with ferns and underwood, we set out with a few attendants to direct our course, as there was no path, and in about half an hour we got out at the upper edge of the wood, where we saw the summit of our mountain at no great distance. The grass here was covered with a heavy dew partaking a good deal of the nature of hoar-frost, which was so chilly and pinching to the bare feet of the natives that they could not endure it, but were obliged to stop and kindle a fire, till the influence of the sun had reached them. We therefore left them to follow us when they could, and continued our ascent up the peak, which was steep and rugged, but thinly covered with grasses and little thickets of low shrubs. These may be considered the Alpine plants of this country, most of which were entirely new to me, and though there were but few of them in flower, yet their variety and the novelty of the track gave new life to my steps and led me on, as it were, imperceptably up the steep, that I was the first who reached the summit of the peak, exactly at half past eight. The rest of the gentlemen followed me pretty close and by ten the whole party crowded the lofty top of Whararai.

As I had observed a number of idlers amongst our party who were unwilling to load themselves, I took the opportunity, as the party arrived on the hill, to mark all those who were well loaded by tying a piece of variegated tape round the arm of each, as a badge of distinction, telling them at the same time that on producing these badges on our arrival at Karakakooa they should be well paid for their service, while those who brought up but small loads would receive but little. This induced several of the idlers to return back again to the plantations for loads, and as they arrived with them, each had a similar badge, but if any of the party, after this, had misbehaved or was not sufficiently careful of what was entrusted to his charge, he was discarded by taking his badge from him. This produced an emulation to please amongst the party, which had a wonderful good effect during the remainder of our expedition.

The day being clear and serene when we arrived upon the top of the mountain the extensive and interesting prospect which rushed upon our sight, on every side, may be more easily conceived than described. The whole western side of Owhyhee lay underneath us, with its indented shore, bays, villages, plantations and forests depicted, as it were, like a map, upon the vast sheet of extended ocean before us, while fleecy clouds hovering at a distance appeared like an immense extent of frozen country with towering mountains and deep valleys of the softest shades—every moment varying their aerial shapes and situations, and presenting the most beautiful prospects of picturesque scenery, over which the eye could eagerly wander without wearyness, and continue imparting to the mind new felt pleasures. In the afternoon these clouds drew in towards the island and bedewed it with refreshing showers of rain. To the N.N.W. of us we had a distinct view of the island of Mowee, but the other adjacent islands were obscured by clouds. On the other side the inland country presented extensive valleys and two immense high rugged mountains capped with perpetual snow. Of these, Mownakaah (Mauna Kea) is the most rugged and peaked: it bore E.N.E. of us, while Mowna-roa (Mauna Loa) is an immense flat cone and bore S.E. by E. of us, seemingly at no very great distance, but we believe that the rarefaction of the air at this height made it appear to us much nearer than it really was.

After kindling a fire and partaking of some refreshment the natives took us to see the crater of a volcano on the north side of the peak, a little below the summit: it formed a rugged hole of 7 or 8 yards in diameter, and of immense depth, so much so, that when a stone was thrown into it its noise was heard in its descent, striking against the sides for some time after, and it did not appear to have been long extinguished as the ashes and cinders round the mouth of it were quite fresh.

We found that the natives regard volcanoes as the habitations of evil spirits, who, when anywise enraged, vomit up fire and hot stones, and to appease their wrath they conceive it necessary to make some offerings to these demons by throwing cloth, hogs and vegetables into the volcano, and on particular occasions we understand that they even sacrifice their criminals by disposing of them in the same manner.

In this visit to the crater we observed that none of the natives went empty-handed, but carried pieces of taro, yam, plantains, etc., to make offerings, which they threw down at the mouth of the crater amongst other rotten remains of such offerings, when they earnestly requested us to leave something too, which we did, such as nails, brass, or pieces of tape, which highly pleased them and they seemed to think that such offerings would be highly acceptable to these spirits.

We staid this and the following day on the mountain, traversing the peak in various directions, every one pursuing his own amusement and making the summit our place of rendezvous, where we met at meal times and reposed at night in small caverns which the natives soon converted into neat and comfortable habitations for us by thatching the exposed parts of them with plantain leaves, loads of which had been brought from the lower parts of the wood, for that purpose; and by strewing the bottom of them over with grass overlaid with mats. What with the pure air, the temperate climate and novelty of the situation every one allowed that two days more pleasantly spent they seldom experienced.

In my rambles I collected every plant I met with, either in flower or seed, which I was sorry to find did not amount to a very numerous catalogue, on account of the dormant state of vegetation in these upper regions at this season of the year, but from the variety I saw of small plants and low shrubs, in appearance quite new to me, I consider this peak as a very interesting track for a botanist to explore in the summer months when, I have no doubt, every steep and cleft will be adorned with flowers innumerable.

Amongst the plants in flower at this time was the *Sophora tetraptera,* which did not exceed the size of a small shrub though lower down the mountain, and particularly on some of the other islands it grows to a pretty large tree; from the wood of which, the natives informed me, they make their spears, and from the fine polish it bears it almost equals in hardness and density of grain the most beautiful mahogany.

The *Dodonæa viscosa* grew here very plentifully and seemed to thrive equally well as down at the seaside, where it is not uncommon. I also found here a small shrubby geranium, quite a new species, and I believe the only one of that genus which has hitherto been found in any of the islands of the Pacific Ocean.

At both noons I observed the barometer, on the top of the mountain: the first day it stood at 22.40, and the second day at 22.44, so if we take the mean of these two observations—22.42 from 30.10, which it stood at on the seaside, the remainder—7.62 in the quantity it fell or sunk in our ascent of the mountain which will give its height 8062 feet above the level of the sea.

The thermometer, observed at the same time, was 65 degrees on the first day and 64 degrees on the second, and at seven on both mornings it was at 45 degrees, but the first evening, at sunset, it was as low as 38 degrees, and the second evening it stood at 41 degrees, which showed in these instances, that the evenings were colder than the mornings; just the very reverse to what we experienced it in the woody region of the mountain.

After breakfast on the morning of the 21st we set out from the top of the mountain, accompanied by upwards of sixty of the natives, amongst whom were some women whose curiosity led them to follow the party; we descended by a very indifferent path, on the southeast side, into the valley between it and Mowna-roa, as it was our intention to return to Karakakooa by an inland route, in order to explore the country and vary our scenes of observation. This inland side of the mountain is but thinly wooded with scattered bushes here and there, and is much more rugged and steep than the other side, for in some parts of our descent we travelled over fields of lava and peeked lava—the most dreary and rugged I ever beheld, so much so that we conceived ourselves very fortunate, with all our care and caution, in getting over them without suffering any accident of broken bones. Our shoes were torn and cut to pieces by the lava that we could scarcely drag them after us, and the natives were crippled notwithstanding they had matted for themselves a kind of sandal to defend their feet, and some of us were obliged to have recourse to the same expedient. Our coconuts and water being expended before we left the top of the mountain, we suffered greatly for want of these articles in our descent in the sultry heat of the day, till we reached near the bottom when the natives carried us a good deal out of our way, to a spring, where we quenched our thirst and filled our calabashes. About four in the afternoon we arrived in the valley much fatigued, when we were conducted by our guides to a deep cavern into which we descended and found very snug quarters, in separate cells, for the night; but none of the women durst follow us into the cavern because of a small morai, which happened to be in the center of it, where a variety of fruits and vegetables that had been offered to the Eatooa were in a decayed and rotten state: the natives, however, repaired it and made fresh offerings.

On looking up the side of Mowna-roa from this valley, the lower edge of the snow upon it did not appear to be far from us, and as the ascent seemed smooth and easy, we proposed to make an attempt to reach it, but the chief and all the rest of the natives were very much against it, declaring that if we should chance to succeed in overcoming the difficulties, the cold on the mountain was so intense as to kill us: as we, however, perceived no apparent obstruction in the ascent we were resolved to try it, and for this purpose we examined the state of our provision which we found very low, but by reducing the number of our party, and adopting a frugal management, there was a sufficient quantity to serve a moderate party for two days, in which time we conceived our object might be accomplished. Having, therefore, chosen about twenty stout, able, fellows, with the chief to accompany us, the rest were sent down to the plantations with orders for some of them to return and meet us with a supply of provisions.

These natives having loaded themselves with our provisions and water, set out with us on the morning of the 22nd, very reluctantly, and after pursuing a path to the eastward, through the valley for about two or three miles, we struck off to the right and began our ascent, as we still perceived no apparent difficulty before us, but we soon found our mistake and the representations of the natives verified, for as we advanced we found the lower part of the mountain here and there copsed with shrubby wood and ferns, so very dense in many places that we were obliged to make a path, step by step, for the whole party, which rendered our progress slow and fatiguing; and in some places the ground was covered over with a fragile crust of lava that broke under our feet, and we stumbled into chinks and crevises that were really very dangerous, while in other places it sounded so hollow underneath us that we were every moment apprehensive of its breaking and swallowing us up in some hideous fissure or cavern. We persevered under these discouraging circumstances till about three in the afternoon, when, perceiving that we had scarcely diminished our apparent distance from the snow, and being quite harassed with fatigue, without any prospect of soon overcoming our difficulties, it was agreed upon to relinquish our pursuit, to the no small satisfaction of the natives, and after taking some refreshment we returned again to the cavern where we arrived in the dusk of the evening.

The night was very stormy with high winds and cold showers of sleet, and next morning we observed that the mountain was covered, much lower down, with fresh snow; so that had we succeeded in our attempt to ascend the mountain we should probably have suffered much from the inclemency of the weather, exposed to these vigorous blasts without any shelter on the bleak side.

The center of the island, between the three great mountains, together with the extensive valleys which separated them, forms a flat dreary tract of inland country of considerable extent and nearly the same elevation, uninhabited (except by some of the feathered race,) and from the scantiness of soil apparently incapable of any kind of cultivation: the trees and bushes with which it is here and there thinly scattered indicates the poverty of the soil by their stinted and scrubby appearance, but as the volcanic dregs, with which it has been strewed from the adjacent mountains, are continually mouldering away by the busy and constant operations of time, this tract may be said to be in a state of slow and progressive improvement, and future ages will probably find it clothed with a rich carpet of verdure.

To give some idea of the elevation and temperature of this inland region I observed the barometer on the morning of the 23rd, at the mouth of our cavern, where it stood at 25.18, and the thermometer was, at the same time, at 57 degrees. I had also observed both, in the same place, on the evening of our first arrival, when the first stood at 25.18, and the latter at 56; so if we taken the mean of the two observations with the barometer, the result will give our height at this station 4883 feet above the level of the sea, so that we may consider the plain which occupies the center of the island to be about 5000 feet in elevation, as it appeared to rise a little from our situation.

After making a scanty breakfast out of the last portion of our provisions we turned our faces homeward by a path which forms a communication, by this valley, from one side of the island to the other, and the great cavern which we had just quitted, after lodging in it for two nights, may be considered as one of the inns upon this road, for the accommodation of travellers passing between the west side of the island and the east end.

In this desert valley we saw some geese of a size somewhat between our common geese and ducks: they were very handsome and had some distant resemblance, in color, to the Canadian goose, but quite a new species, not yet described; we also saw some crows which, together with the preceding, we believe are peculiar to these islands and commonly inhabited these upper regions.

After travelling about four miles we entered the woods at the mouth of the valley and began our descent in a winding direction, but as the girdle of the forest is not here so broad as on the sides of the mountain, and the path being tolerably clear, we soon got through it, as we were now anxious to get down to the plantations, to satisfy the craving of both hunger and thirst, for the regions above the woods are but very scantily supplied with water; many of the springs where the natives expected a supply were dried up, which often occasioned a grievous disappointment, and whenever we got any they were themselves great devourers of this necessary article.

About the middle of the woods we met with our trusty and faithful adherents, who had been sent down to the plantations the day before, and were now making all the haste they could to our relief, with heavy loads of provisions: as we had but a scanty meal in the morning this supply came very seasonably and we instantly sat down and lightened their burdens by partaking of a hearty refreshment, after which we continued our descent, though now with less hurry, and when we came out of the woods, we found the lower edge of it, as in other places, adorned with rich plantations of plantains and bananas; from thence we pursued our course, in a slanting direction, to the southward, till we came to a village among the upper plantations where we took up our residence for the night, about nine or ten miles to the northeast of Karakakooa Bay, and where we were surrounded by the most exuberant fields of the esculent vegetables of these islands, which for industry of cultivation and agricultural improvements could scarcely be exceeded in any country in the world, and we were happy to find their labor here rewarded by such productive crops of these vegetables.

We found that we had taken up our quarters in a plantation belonging to Teamotoo, and as that chief had kindly requested, we now made the man he sent with us, our purveyor, who readily supplied us with every thing we wanted.

At eight next morning the thermometer was at 56 degrees and the barometer stood at 28.00: if this observation of the barometer is deducted from what it stood at, the same evening, at the seaside, the difference will give our height at this station 1980 feet above the sea.

After breakfast we were entertained with the performance of a young girl who danced in a smll area before our door; she was assisted by her father who beat on a small drum and joined her in singing and reciting, and sometimes in a brisk dialogue, while she, encumbered, as she was, with a grotesque dress, traversed the area with such measured paces and fascinating movements, with such graceful attitude and such agility and animation of acting, so punctually timed and so varied by easy transitions, as would have done credit to the most expert attitudinarian in any part of the world, and far exceeded anything of the kind we had before seen at these islands: every joint of her limbs, every finger of her hand, every muscle of her body, partook unitedly of the varied sympathetic impulses; while the motion of her eyes transfusing their transient glances, and the harmony of her features, were beyond the power of description.

We were given to understand that this actress, who might be termed an opera girl, and her father, belonged to a party who strolled about the country, from village to village, and gained their livelihood by entertaining the inhabitants with their performances, and if we might judge of her merits from the specimen we had just seen, of her acting, we think she was possessed of natural powers to entertain even in a more refined country.

After presenting this young actress with suitable presents of beads, lookingglasses, scissors, tape, and other articles, we descended through the plantations, at our leisure, and collected whatever flowers and seeds their interesting banks produced, that we had not before met with in the journey.

Our adherents who had been distinguished on the top of the mountain, now wore their little badges round their arms and were the envied objects of every group of the natives we passed.

In the evening we arrived at a village on the sea-side, a few miles to the northward of Karakakooa, where we stopped for the night, and where I observed the barometer, at sun-set, close to high-water mark, when the mercury stood at 30.12, and the thermometer was at 74°. This height of the mercury in the barometer coincides so nearly with what it was when we began our ascent, that the observations made with it may be considered as sufficiently accurate to give a general idea of our height at the different stations, especially as no material changes of weather happened during our excursion that were likely to affect it, but it is proper to notice that the correction for the temperature has not been allowed for in any one of these observations.

Next morning we set out for Karakakooa, by land, over a dreary tract of rugged lava and very uneven ground along shore, till we came to the village of Kowrowa where we hired canoes for the whole party, and arrived on board the "Discovery" about noon, when all our attendants were rewarded for their services, of which we were able to make a very favorable report to the king, and he was so pleased with our representation of their conduct that he himself fixed upon the quantity of articles to be given them as the price of their labor and good behavior, and with his own hand laid out a small piece of iron fashioned like a chisel, a parcel of small nails, a bunch of beads, two knives, a file, a pair of scissors, a looking-glass and a few yards of tape, which was handed to each of them; but I observed that all of them gave up the last article to the king, and seemed so well satisfied with what they got that they were all desirous of setting out with us again next day. The chief was presented with the same articles but in greater proportion, together with the addition of an ax, and as much red cloth as would make him a cloak; the last, however, we understand he was not suffered long to keep, but was obliged to deliver it up to the king. * * *

KAI A KAHINALII AND ULU'S SACRIFICE.

Hawaiian Legends of the Deluge.

By Henry M. Lyman.

From the Williams Quarterly, June, 1858. Courtesy of Curtis J. Lyons.

In process of time after the union of Kahiko and Kupulana, the islands were peopled with men and women. There were certain places set apart for the gods and for their priests; all the rest belonged to the king and his chiefs. The common people dwelt by sufferance on the lands of their superiors, who were as deities to them. In consequence of this the worship of the gods became infrequent, and the consecrated places were encroached upon by the ignorant peasants. It was because of these transgressions that the great flood occurred—the flood by which men were destroyed for their impiety; and its occurrence was on this wise:—

A poor fisherman dwelt on the sea-shore at Kawaihae, where he lived by the exchange of dried fish for the rich fruits of the earth brought from the valley of Waipio. From early dawn till late at night he would remain in his canoe, drawing the heavy net, or trailing the pearl-shell hook among the sea-weeds and corals of the bay; and when his fish basket was filled, slowly would he paddle to the shore, for there the king's servants were always waiting to carry off the largest share of his gains.

Thus the fisherman labored from day to day, quite forgetful of the gods and of his duties to them, till a certain memorable morning when, just as the eastern stars were fading, he sailed out from shore to a favorite fishing ground where he unrolled his long olona lines, and, baiting the hooks with savory morsels of rock-squid, sank them to the bottom of the sea. For a long time he trailed the lines, but no success crowned his efforts. An angry twitch would occasionally rouse him to a belief in the capture of some scaly monster; but an examination of the hook brought to light nothing more valuable than a sprig of coral, or an unsightly bunch of limu, in which the dog-tooth barb of the hook had become entangled. When these undesired products of the ocean appeared, he would curse the sea-gods, and angrily drop over another hook baited even more cunningly than before.

The sun had now risen, and was looking over the hills of Puukapu, when the fisherman, thoroughly exasperated by his ill-fortune, stood up in the canoe and commenced to blaspheme all the divinities who dwelt in the sea, challenging them to come out of their caves and listen to his curses. His prayers were immediately answered. With a jerk that nearly upset his canoe, the fish-lines were all snapped off and dragged under water, while the sea began to foam and surge as if vexed by the gusts of the *mumuku*. The waves were then parted, and close beside the canoe appeared a tremendous blue shark, which the fisherman at once recognized as the great ruler of the ocean with whose name he had just now been making so free. Falling upon his face, he began piteously to implore pardon for his folly; and stripping off all the garments he cast them into the sea as an offering, at the same time promising eternal reverence and submission on condition of present release from the terrible consequences of his sin. The shark swam slowly around his terrified victim; and, at length, coming under the outrigger of the canoe, he raised his broad, flat nose over its edge, and addressed the man as follows:—

"The sea is the home of the gods: our dwelling place is among the branching coral groves: we sport there under the dark waves, and when storms vex the ocean, we calm the troubled deep. The land is the abode of man: our temples are there. But man is wicked: our altars are deserted and desolate. No garlands of *maile,* no wreaths of *hala,* crown our images. No offerings of fish delight the senses of the priest. No solemn sacrifices celebrate our glory and power. Gone, gone, is the reverence due to our might! Accursed is the race of Wakea! No more shall they cumber the land of Hawaii; the land itself shall no longer remain; the dark blue ocean shall roll forever over all."

At this the fisherman redoubled his prayers and entreaties to all the gods of the heaven and the earth, as well as of the sea; but in vain—he could obtain no remission of the general sentence. The shark was, however, so far moved with pity as to grant him his own life and that of his wife, on condition that they would at once betake themselves to the summit of the highest mountain on the island. The rest of the land would then be immediately overflowed. Having thus declared the fate of mankind, the terrible sea-god disappeared in the depths of his kingdom, and left the trembling suppliant to provide as best he might for his own safety.

Swiftly then sped the fisherman's canoe back to the ill-fated shore. As the light bark shot up the sloping beach, he leaped hastily out upon the white sand, and, running to his hut, informed his wife of the fearful ruin which was about to fall upon the race of man.

"Alas, let us hurry away," cried the woman.

"Yes," said her husband, "let us hasten to Mauna Loa, for that is a mountain far distant, and the sea cannot soon reach its top."

"But," she replied, "Mauna Kea is nearer; let us go thither, that our strength fail us not through the length of the way."

"But the highest mountain must be our place of refuge, and how can this which is nigh unto the shore be higher than that far inland peak overlooking the bright pool of Kilauea?"

"Ah, never," said the woman, "can we climb those far reaching slopes. Surely the waters would overtake our weary bodies ere we ever reached the chasm of Mokuaweoweo. The sun shines in the morning on the peaks of Mauna Kea long before the snows redden upon Mauna Loa; let us hasten to that refuge where the light of heaven comes earliest; if we perish, we perish."

Her husband then yielded, and they at once commenced their flight up the steep side of Mauna Kea. All day long they hurried on without stopping to rest; and they heeded neither the sharp stones which wounded their feet, nor the stiff needle-grass which pierced their flesh. Long was the distance—even three days' journey for the swift runners of our times—and difficult the ascent; but fear gave them the strength of gods, and before the sun went down they stood upon the highest peak of the mountain. Then the woman, looking down upon the fair prospect below, wept as she saw the smoke of the evening fires curling up from the villages and groves along the surf-bordered coast of the island; and she said:

"Alas, for my country—the beautiful land of Hawaii! The days of thy beauty and happiness are gone. No more shall the bright sun look down upon the pleasant shore; no more shall the soft moon peep over the hills of Waipio. Alas, for the land of my birth, the home of my youth! For the wide rolling sea will hide it from mine eyes. Where now the smoke rises, there death shall be; and the voice of young men and maidens, the laughter of youth, and the joy of old age, the song of the *hula,* and the worship of the gods, shall be heard no more in the land of Hawaii. Alas, for my brothers and sisters who shall be drowned in the sea! For Hawaii shall be no more; the stormy ocean shall cover the land from the light of the skies, and the gods of Night shall resume their ancient sway."

As the sun drew near the western horizon, dark clouds rose over the ocean, and floated through the air. The wind was dead; but strange sounds, as of some mighty cataract plunging through the regions of space, filled the heavens with a dull, monotonous roar—feeble and faint, at first, but ever rising and swelling on the ear. The vast expanse of the ocean was suddenly whitened with surf; and hugh billows ever and anon came tumbling against the shores of the island, sweeping away whole villages at every surge. From out of the clouds were heard the awful voices of the gods, as they sailed up and down the sky, breathing fire upon the earth, while Pele rumbled her thunders far down under the feet on the mountains. Then came a whirlwind tossing houses, trees, and rocks, through the high heaven; and the waters of the ocean rose in its track and rolled in over the land. Utterly destroyed then were the islands of Hawaii! The peaks of Maui were sunk, and the bitter waters flowed over Hualalai and Mauna Loa. Ah! terrible was that night for the watchers on the lone mountain top; but when morning again dawned the tumult had ceased, and the ocean slept calmly at their feet as when they dwelt by its side on the sands of Kawaihae. All day long the luckless pair sat upon the narrow peak, and watched the dead bodies of men and animals floating past with the tides, and wondered at the completeness of the destruction which had overtaken the earth, till the second night drew its shadows around them. As the darkness settled over the sea, deep horror seized upon their souls, and they prayed to the fierce gods for deliverance: but while nine days and nights came and went no answer was given to their prayers. Then a profound sleep took possession of them, and when they awoke on the morning of the tenth day, the ocean had retired from the land; the horizon was once more removed afar off; and the blue waters, as formerly, stood up in a wall around the shores of the island. But the beauty and loveliness of the earth was gone. There was no grass, nor were there any trees. The bubbling springs were choked with masses of putrid fish; the ravines and water courses trickled only with bitter brine; and the earth lay reeking in the sun. Alas, for the glory of the land which had been the chosen dwelling place of gods and of men.

Slowly and with trembling steps, the fisherman descended with his wife along the gentle slope that leads to the bay of Waiakea. Having there arrived, they built a temple and offered sacrifices to the gods. For many years they dwelt at Puueo, lived to see the island again filled with their children's children. Thus ends the Mele of the Kai a Kahinalii.

After the subsidence of the Deluge of Kahinalii, the earth was bare of fruits, and the inhabitants had nothing to eat, save fish and sea-weeds from the ocean, and a kind of reddish clay which they mingled with limu. But, during the reign of the second king after the flood, there lived at Waiakea a man by the name of Ulu, and he had a young son named Mokuola. This child was small and sickly; and his parents felt great sorrow for the pains which he suffered in consequence of eating the gross food which nature had so scantily furnished for their sustenance. Every morning his father would paddle out in his little canoe, and draw the fish-net through the still waters of the bay, if perchance he might catch a tender mullet or an opelu for his dear son; while at evening the kind mother would wrap her boy in a sheet of yellow kapa, and, when the sea-breeze gave way to the cool mountain wind, go down to the wet rocks on the sea-beach in search of limpets and mussels for her child's supper. In spite, however, of their fondest attention, little Mokuola grew thinner and weaker from day to day, so that his parents quite began to despair of his life. One day Ulu said to his wife:

"What can we do for our son? He will surely die, for there is nothing that he can eat. It is now better that one of us should die, since we are old, and it will be in vain that we have lived, if we pass away and leave no children upon the earth. Have we not heard from our ancestors that, before the great deluge, the land brought forth in abundance fruits which were food for all men? No doubt, the seed of the trees was lost in the flood, since there are now only the *koa* and the *lehua,* whose flowers are food but for the winds and the rains. I will die; perhaps Kanaloa will then relent, and save our son from death."

The woman then answered: "It is certainly as you say; but how shall you, by dying and leaving me alone, provide that which we have not?"

"Indeed," replied her husband, "I cannot now tell; but tomorrow morning, when the first sunlight reddens the snow on Mauna Kea, I will bear an offering of fish to the heiau at Puueo, and perhaps the god will make some answer to my prayers: till then, let us cheer our son, for he is continually wasting away before our eyes."

At early dawn on the morrow, these devoted parents arose from their couch, and made preparation for the solemn rites of that day. The father took from the net five fresh mullet and wrapped them carefully in the broad leaves of the *ki* plant. He then washed his whole body with water from the river; and, throwing a new mantle over his shoulders, walked forth along the sandy sea-beach, just as the rays of the rising sun were dancing over the water, and blushing upon the snowy peaks of the mountains. Slowly did Ulu proceed along the shore, the little waves dashing at his feet, and occasionally sprinkling his mantle with foam, till he reached the Wailuku river—then a streamlet flowing musically through tall weeds and rushes, while the rainy season lasted, but leaving only a dry and thirsty water-course during the warm summer months. Here he stopped and washed himself anew before crossing over to the sacred district of Puueo, where the temple was situated. He then prayed aloud to the gods of the heaven and of the earth: "Oh Kanaloa, arise; awake, oh Kane; and ye unnumbered gods who dwell among the clouds of heaven, awake! Come, hear me, from the black cloud dropping tears upon the smooth surface of the sea; from the white cloud; from the long pointed cloud hanging over Mauna Loa; from the fiery cloud, and the dark blue cloud; from the low mistly cloud driven by the east wind against the precipices of Waimanu; from the ash-colored cloud covering the moon in the morning; look down with pity upon the offspring of Kahiko."

Having prayed in this manner, he passed over the Wailuku and entered the temple, which was situated on a high bluff overlooking the bay of Hilo. As he approached the priest came forth to meet him, and together they advanced towards the altar upon which sacrifices to the gods were laid before their images. Dropping on one knee, Ulu again invoked the presence of the deities; and, giving the fish to the priest, said: "Here are *ki* leaves, and here are fish for the great Mooalii, and here is the son of Wakea. Grant an answer to his request." The priest then repeated the usual prayers, while Ulu, awaiting the response of his god, remained prostrate before the altar till the afternoon sun was hidden behind the clouds of Mauna Kea, when a voice within the altar was heard saying: "The child of Kapapa was deformed; it had neither arms nor feet. She buried her infant by night at the end of the long house. In the morning there were stalks and leaves. Wakea came near and called it *kalo*."

This was the response of the god; and after receiving its interpretation from the priest, Ulu arose and returned to his home at Waiakea. There his wife met him with anxious enquiries concerning the result of his visit to the temple. "I have heard," said he, "the voice of Mooalii. To-night, as soon as darkness is drawn over the sea, and the fires of Pele light up the clouds hanging over Kilauea, the black cloth will cover my head. When the breath is all gone from my body, and my spirit has departed to the realms of Milu, carefully bury my head near the spring of running water.

Plant my heart and entrails before the door of the house. My feet, my arms and legs, hide away in the same manner. Then lie down upon the couch where we two have so often reposed, and listen during the watches of the night; but go not forth before the sun has reddened the morning sky. If, in the silence of the night, you shall hear sounds as of falling leaves and flowers, and afterwards as of heavy fruit dropping to the ground, know then that my prayer has been granted, and that the life of our son shall be saved."

With these words Ulu fell on his face and expired, while his wife uttered the following lament:

"Alas, my friend, my husband, whither art thou gone? My friend with whom I endured the pains of hunger and thirst; my friend in the times of wind and rain, of cold and heat, alas, alas, thou art gone, no more return!

"Dear was he to his wife who mourns for him now. Brighter and more beautiful than the red flowers of the forest—stronger than Kane, or the kings of old—fiercer in battle than the raging surf when the north wind blows—but just and gentle with his companions. Such was my friend, my husband, who is gone. Alas, alas, he is gone, and no more shall he return!"

It being now dark, the woman proceeded to cut up the body of her dead husband with a bamboo knife and a sharp shell; after which, she buried the different portions, and then retired to the house, where she laid herself down by the side of her child, to await the accomplishment of the oracle. The little boy slumbered and all was still until midnight was passed, when a gentle whispering was heard as of the mountain breezes sporting with the foliage of the forest. Soon the rustle of falling leaves was audible, and then followed the sound of dropping fruit as it ripened and fell to the earth. The faithful wife rejoiced as she heard these noises, for she knew that her husband, by his death, had found favor with the gods, and that all his desires were now fulfilled; but mindful of his parting words she remained quietly on her couch till the morning sunlight peeping through the cracks of the door informed her of the return of day. Awaking her son, she then arose, and looked forth from the house, which, to her amazement, was now surrounded by a perfect thicket of vegetation. Before the door, on the very spot where she had buried her husband's heart, grew a stately tree covered over with broad, green leaves dripping with dew, and shining in the early sunlight, while on the grass lay the ripe, round fruit, where it had fallen from the branches above. This tree she called *Ulu* (breadfruit) after her husband. The little spring was concealed by a succulent growth of strange plants, bearing gigantic leaves and pendant clusters of long yellow fruit, which she named bananas. The intervening space was filled with a luxuriant growth of slender stems and twining vines, of which she called the former sugar-cane and the latter yams; while all around the house were growing little shrubs and esculent roots, to each one of which she gave an appropriate name. Then summoning her little boy, she bade him gather the breadfruit and bananas, and, reserving the largest and best for the gods, roasted the remainder on the hot coals, telling him that in future this should be his food. With the first mouthful, health returned to the body of the child, and from that time he grew in strength and stature until he attained to the fullness of perfect manhood. He became a mighty warrior in those days, and was known throughout all the island, so that when he died, his name, Mokuola, was given to the islet in the bay of Hilo where his bones were buried; by which name it is called even to the present time.

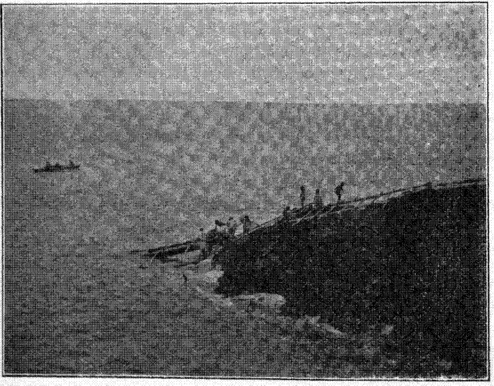
CANOEING OFF THE PUNA COAST OF HAWAII.

ELLIS, in his "Tour of Hawaii," in 1823, gives the description of a peculiar practice of canoe handling by the natives of Kehena, in the district of Puna, that differed from the general custom prevalent elsewhere throughout the islands, in which they showed remarkable dexterity, so much so as to call forth his powers of pencil and pen. Unfortunately the sketch he mentions making of "their useful contrivance" for this practice does not accompany his account thereof, but it may interest some of our readers to know that the custom still prevails among their descendants in that section of Hawaii, as is shown in the accompanying illustrations obtained through a late visit to Puna. The account above referred to is as follows:

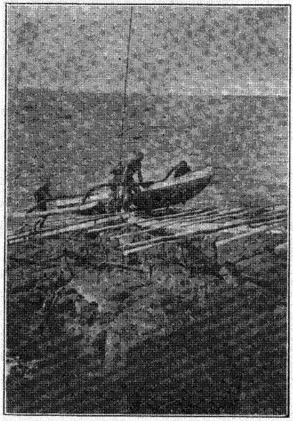
"The village was populous, and the people seemed, from the number of their canoes, nets, etc., to be much engaged in fishing.

Their contrivance for launching and landing their canoes was curious and singular.

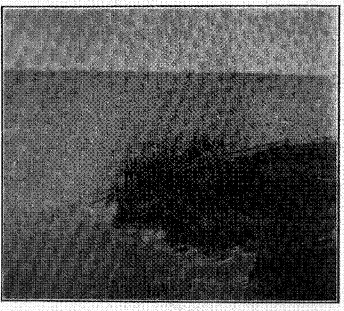
"The bold coast is formed of perpendicular or overhanging rocks, from forty to sixty feet high, against which, this being the windward part of the island, the swell beats violently. In one place where there were a few low rocks about thirty feet from the shore they had erected a kind of ladder. Two long poles, one tied to the end of the other, reached from these rocks to the top of the cliffs. Two other poles, tied together in the same manner, were fixed parallel to the first two, and about four or five feet distant from them. Strong sticks, eight or ten feet long, were laid across these at right angles, and about two or three inches apart, which being fastened to the long poles with ie, (the tough fibrous roots of a climbing sort of plant which they find in the woods), formed the steps of this ingenious and useful ladder. The canoes of the place were light and small, seldom carrying more than one man in each. A number were just landing as we arrived at the place. Two men went down, and stood close to the water's edge, on the leeward or southern



side of the rock. The canoes were paddled up one at a time. The person in each, then watching a convenient opportunity, rowed swiftly to shore when the rolling billow carried the canoe upon the rock, and it was seized by the two men who stood there to receive it. At the same instant that it was grasped on each side by the men on the rock, the one in the canoe, who steered it, jumped into the sea, swam to the shore, and assisted them in carrying it up the ladder to the top of the cliff, where they placed it upon curiously carved stools, made of the wood of the erythrina, and returned to the rock to bring up another in the same manner. In this way five or six were brought up while we stood looking at them, and I took a sketch of their useful contrivance."



The views we present illustrative of this method were taken at a point further down the coast, the landing place of a scattered fishing village beyond Kahaualea, by Mr. F. Wm. Thrum, and are probably the first and only pictures secured showing this dextrous practice. In these it will be noticed that the canoes are much larger than those used at Kehena in 1823, requiring more men for their handling in a fishing cruise, and consequently calling for a larger co-operative force in landing. No less hazardous is the operation of launching at such stations, whether in the comparatively smooth spell as here shown, or in heavy weather. Both occasions call for decisive action on the part of the crew upon the given signal of the watcher for the propitious wave of a height that shall carry them off as it recedes, without a precipitous drop from the rude ways, or, land them well up on the skids on returning.



At their launching the canoe is brought down to the incline, and the canoeists, standing on either side, at the auspicious moment slide it down to meet the incoming wave and leap into their craft as it takes the water, the momentum of the operation aiming to carry them a sufficient distance to permit them to seize their paddles to continue headway, and prevent a return wave dashing them against the rocks.

These views enable one to understand the landing operation very clearly, and we can realize in a measure that rough weather is far preferable to the "calm and glassy sea" for the successful operation of this venturesome calling.

Since our attention has been called to the above it is learned that the practice used to be in vogue in certain parts of the Hamakua coast also. This would seem to indicate it as of common practice on the rocky windward coasts in the olden time where the people, adapting themselves to their conditions, of necessity became fearless and skillful in this hazardous undertaking, as are the Puna fishermen of today.

A native sailor once on being bantered on the slow sailing qualities of his schooner replied, "I know better; for notwithstanding light winds she has gone so fast that I have lost all the buttons off my pea-jacket."

PYRETHRUM, A POSSIBLE NEW AND PROFITABLE INDUSTRY FOR SMALL FARMERS.

By Dr. A. Marques.

MANY difficulties seem to stand in the way of a prompt solution to the pressing and much desired problem, the "Americanization of these Islands by the only stable and desirable class,—Small Farmers. But the chief of these difficulties is probably the finding of crops or industries which could be made profitable, here, on a "small" scale, within the reach of "small" farmers with "small" means. Small farming, such as the word designates in the States or in Europe, viz, the growing on a small tract of land the various staples necessary for the subsistance of the farmer himself, leaving a small surplus for sale, is practically impossible on these Islands, whose natural products,—sugar, coffee, rice, etc., need large capital. It therefore seems that the discovery of every plant that might be grown profitably here by a small farmer at a minimum outlay, would be one decisive step towards the solution of the problem. This aspect of the question has not failed to attract the attention of the local Federal Agricultural Station, and has already brought out various suggestions. But there is one plant, not yet mentioned, which seems to me might be found to possess all the desirable requirements,—minimum labor with maximum profits,—and to be especially adapted to our high-lands, this being the "Pyrethrum," the plant from which is obtained the powder so extensively used against mosquitoes and insect pests.

Pyrethrum belongs to the numerous family of Chrysanthemums, and we know, by the success of our Japanese gardeners and florists, that many ornamental species of that family thrive quite well on these Islands: in Honolulu, the finest blossoms come from the heights of Tantalus. But, strange to say, it is only from the particular species called "Pyrethrum," in its two varieties,—the *Persian* (P. *Roseum*) and the *Dalmatian* (P. *Cinerariaefolium*)—that the insecticide product is obtained: and so far, these varieties have not been tried here, though they have been experimented and grown in California, to a commercial success, particularly the "Cinerariaefolium" variety. In fact, the "Buhach" powder,—such being the name by which it is known in California,—is admitted to be of much superior quality to that imported from its indigenous districts in Europe. Outside of California, the plants from which the world's consumption is supplied, either grow wild on the sub-alpine zones of the Trans-Caucasian Mountains, at an altitude of from six to eight thousand feet, or are carefully cultivated in Dalmatia, that country being apparently the principal producer at present, the greater portion of its products being imported in the U. S. through the Port of Trieste. The growth of the pyrethrums has also been tried with indifferent success in the South of France and in Algeria*, and lately with good results in Japan, principally in the province of Osaka. However, the whole production is far from growing apace with the constant increase in consumption, the world over, and this year, owing to deficiency of crops through frost, in Dalmatia, the prices have advanced one hundred per cent., with a still upward tendency. The economic importance quietly attained by this culture would be a revelation to farmers, if the figures of the quantities imported, in the United States alone, could be obtained from the ill-devised Customs Reports; but, in default of these, an idea can still be obtained, from the fact that, merely in the Hawaiian Islands, from 25 to 30 tons of Pyrethrum powder are imported annually, at prices ranging formerly from 13 to 18 cents a pound in bulk, now advanced to 24 cents for the European kind, and to 64 cents a pound in tins for the California product, this representing a local yearly output of from seven to fifteen thousand dollars of stuff that could be grown here. Then again, another proof of the importance of this culture, is the fact that, in Dalmatia, it is considered the most valuable of all their crops, and irrigated fields of "Pyrethrum Cinerariaefolium" are stated by reliable authorities, to produce there crops of flowers bringing in from 600 to 1000 dollars per acre.

The Pyrethrums are perennial plants of very easy multiplication by seed or by division of the side shoots. For a long time, it was quite difficult to procure seeds of either insecticide varieties.

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*See U. S. Report comm. of Patents 1857 p 130 and 1861, pp 223-331, also Bot. Soc. Agr. Bahia II, 1903 No. 4.

because the people of the regions where they grow spontaneously, desired to keep the monopoly for themselves; in Persia, there was even a death penalty against those who tried to procure seeds, and, in Dalmatia, the seeds that were readily sold to foreigners were always previously "prepared," generally baked, in order to destroy their germinative power. However, of late, seeds have become more easily obtained. They are of rather slow growth taking from thirty to forty days to germinate; but, afterwards, the plants grow rapidly. The two varieties in question are distinguishable by the form and color of their flowers and by the shade and indentations of their leaves: the P. Roseum has large pale-rose or bright pink flower rays: the flowers of the P. Cinerariaefolium are rather smaller and more uniform in color, with pure white petals, resembling somewhat the well known "Oxeye Daisy," while its leaves are lighter, often nearly whitish green, with deeper and broader incisions: it is said however that the first variety is apt to change its aspect by repeated cultivation, growing after a few years into great variations of shades, from deep crimson to pure white, and producing double as well as single flowers.

Of the two varieties, the Dalmatian (P. C.) is the one that bears the flowers producing the most decidedly powerful and successful insecticide,—thereby commanding the highest prices. This variety should by all means be preferred for cultivation here. I have been fortunate in receiving last spring from a reliable source in Algiers, a small quantity of well selected seeds of this kind, which I have handed over to the Federal Agricultural Station and to the Honolulu Promotion Committee, for the purpose of their being distributed among competent persons willing to give the plant a fair trial; and so far these seeds have produced strong and promising plants. This trial ought to be watched with considerable interest, and I hope that the experimentators will give special attention to the gathering of well matured seeds for future distribution.

The cultivation of this plant will be found of ideal simplicity, and well fitted for small farmers. The seeds are first germinated in a nursery, in the manner used for all tiny seeds: In California this sowing, I understand, is done in a small bed of fine loose sandy loam soil, very slightly mingled with fine manure, the seeds being mixed with dry sand and sown carefully on the top of the bed, the surface of which is then worked one half-inch deep with a rake, to bury the seeds: the bed is then lightly sprinkled every evening until the plants are sprouted, and afterwards watered twice a week; and when thirty or forty days old, they are carefully weeded, after which they are ready to be transplanted, if vigorous enough, preferably during rainy or cloudy weather, and placed in rows 20 or 22 inches apart, in the permanent field, the soil of which must have been duly prepared by a careful ploughing to the depth of 16 inches at least. Manure is necessary to the field only if the soil be of very poor quality. Pyrethrums do not thrive so well if the soil be too clayey: they like a moderate amount of rain, or irrigation, which very greatly increases the number and size of the blossoms; yet they can thrive on dry lands, but they positively object to an excess of water. During the first twelve months of growth, the only necessary care is hoeing when the weeds threaten to outgrow the plants. Few flowers appear during this first year, the real crop beginning during the second year, when the blossoms have to be gathered two or three times a week. The quantity of flowers on each plant increases during the subsequent years, up to the 10th or 12th, when it begins to decrease, and at this time a new plantation is generally started.

The gathering of the flowers ought to take place during fine dry weather, when they are about to open, or when fertilization takes place, this being the time when they have the greatest quantity of the essential oil which constitutes their peculiar insecticide value. When labor is scarce or too expensive for the picking to be done exclusively by hand, a kind of shovel is used, in which a number of slits are made, large enough to let the young buds escape, yet small enough to gather the full grown buds and blossoms. When the blossoming has ceased, the stalks may be cut within four inches of the ground, and utilized by being ground and mixed with pulverized flowers; this is not considered as an adulteration, though it produces an inferior grade of powder, but, owing to the high price of the flowers, many real adulterants are commonly added to the powders of commerce. Thus, I have heard that a mixed product made in Japan, was lately sent here, through a Seattle firm, which, proving ineffectual, had to be returned. Great care must be taken not to expose the flowers to moisture, and the drying must be watched,—too much sun, (and still worse artificial heat), tending to volatilize the precious essential oil. Consequently, they are best dried in the shade, under a convenient shed, whereby not only their strength is preserved, but their appearance being handsomer, they fetch better prices. When thoroughly dried, they are carefully closed in sacks, or other containers, up to the time of pulverization, which needs special machinery. However, small cultivators need not bother about grinding their crop, because a ready and profitable sale can always be made of the whole flowers, which are preferred by honest manufacturers, to avoid adulterants. In fact I know one firm, Mr. Leon Query, manufacturer at Montgesoye, (Doubs) France, who would at any time be ready to buy, at the highest market quotation, all the flowers that could possibly be grown on these Islands.

The pyrethrum powder is generally used in fumigation against flies and mosquitoes, or in dry powder to scatter over insects: but it is also utilized in lotions, either in alcoholic solution, or a kind of tea being made of the flowers with warm water, for sprinkling over plants, to destroy their parasites. If this plant was grown here, it would probably be found a valuable and ready adjunct to the different processes now employed against the various pests of our industrial plants, and it might especially help to protect the growth of cotton plants, towards which so much attention is now being given*. Information on the use of pyrethrum, in its various modes of application, can be found in the U. S. Report of Agriculture 1881-82, pp. 76-78; in the 4th Report of the U. S. Entomological Commission, pp. 169-180, and in Bulletins 68 and 76 of the U. S. Bureau of Chemistry.

Now to summarize the subject, it will be seen that the cost of this plant in an industrial way, would be as follows:

First outlay: Seeds, ploughing of land, sowing and transplanting; afterwards, occasional weedings, gathering and drying the flowers, and packing in sacks for transportation. Is not this deserving of a fair trial by those who claim the desire to encourage small farming in this country?

Occasional enquiry is made relative to the opening of Lunalilo Home for aged indigent Hawaiians. Its corner stone was laid with cermonies April 8, 1881, and the building was thrown open to the public in an informal manner March 31, 1883.

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* It has been noticed that, in gardens where specimens of the insecticide varieties of Pyrethrums are grown, the neighboring plants are less liable to the attack of bugs and other pests, whereby it would seem that Pyrethrums might be grown as preservatives amongst valuable plants threatened by parasites.

PINEAPPLE BY-PRODUCTS.

By T. F. Sedgwick.

THE utilization of the by-products of many of our industries has of recent years been a source of large profits. In some instances, that of meat packing for example, every phase and every department of the business has been so thoroughly studied and so well systematized that every available particle of material has been utilized in one way or other and the actual waste has been reduced to a minimum.

Many industries that were just living prior to the utilization of their waste products are today paying good dividends. It has been a noticeable fact that when a business pays well on the main product of the manufacture, not much thought is given to finding ways of saving a little more in this place or in that or of exhausting the possibilities of the waste materials, but when the business begins to decline owing to a lowering of market prices, or for other reasons, the manufacturer bestirs himself to a serious consideration of greater economy in the handling of time, machinery, and material.

The Pineapple industry in Hawaii is taking the same course as other industries. Heretofore little attention has been paid to the waste material from the cannery, but of late the large packers are interesting themselves in the question of a profitable use for the refuse.

A brief description of the process of canning pineapples may be helpful to an understanding of what the refuse from such a factory consists.

Removing the rind is the first operation in the process. To do this the fruit is placed horizontally between two pin clutches which pierce the ends of the fruit. The pineapple is made to revolve by throwing the machine into gear just like a lathe, and an operator manipulates a knife which removes the rind, cutting deep enough to take out all the eyes lying under the outer skin. As these penetrate some distance into the fruit, the loss of pulp with the rind is considerable, although a part of the pulp is recovered in a subsequent process called grating.

The pineapple is removed from the machine, the ends cut off and the fruit trimmed a little and then passed on to the corer and shaper. This machine removes the core and shapes the fruit to uniform size. The waste from this process—chiefly the core, goes directly to the dump car, although occasionally it is canned separately for confectioners' use. The fruit next passes through the cutting machine which cuts it into uniform slices which are carried along a conductor, sorted, and put into cans. The cans are then partly filled with sugar syrup, then passed through a steaming apparatus, topped, and run to the cooker. When the cans are cooled after leaving the cooker, they are ready for the labels and packing for shipment.

Besides the refuse material from the paring, trimming, coring and shaping, there is a direct loss of juice which runs down the drains to the dump car or sewer.

Various approximate estimates have been made of the total loss of material during the canning process. Some have placed it at 40% of the weight of the fruit, and others have put it as high as 60%. That is, by the first estimate, 100 lbs. of fruit would give 60 lbs. of sliced and grated fruit ready for the cans. By the second estimate the 100 lbs. of fruit would give 40 lbs. ready for the cans. The sugar syrup added would make the cooked fruit in cans weigh more than this.

As a conservative figure for the sake of calculation it may be assumed that 100 lbs. of fruit will give 60 lbs. of cooked fruit with sugar syrup. Placing the annual production of the Hawaiian Islands at 500,000 cases of prepared fruit, and allowing 30 cases to the ton, it means that the production in canned fruit amounts to about 17,000 tons, and in order to produce this, about 28,000 tons of raw fruit are used, of which 11,000 tons of material go to waste.

The question arises, What can be done with this 11,000 tons of material to make it profitable? Probably one-half or three-fourths of it is juice—juice of the same quality and just as platable as that in the cans. To see it go deliberately to waste has aroused some of the packers to investigate.

Attempts have been made to sterilize and bottle the juice to put it on the market in competition with grape juice. There has been no difficulty as to the keeping quality of the juice, but the flavor, so far, leaves much to be desired.

Vinegar has been made from the juice, and it is a satisfactory product for local consumption, but hardly a profitable one for export.

Some have suggested making de-natured alcohol, and others have proposed pineapple brandy, but as yet nothing has been definitely or extensively undertaken.

The juice of the pineapple contains from 9 to 14 per cent. solid materials, the rest being water. This solid material is composed of sugars, citric and other acids, flavoring materials, albumenoids and other substances. The quality of the juice is determined chiefly by the amount of citric acid present, sugars and the flavoring substances or essential oils. In making a palatable beverage of the juice the difficulty is to hold one or all of these substances constant in the juice. If for instance the juice is simply sterilized, the heat necessary to effect sterilization is sufficient to volatilize the essential oils, thereby destroying the natural flavor and rendering the juice insipid. If it is desired to increase the natural sugar content of the juice, then in concentrating the juice not only is the natural flavor destroyed but the amount of citric acid is increased, and the beverage becomes too sour. If calcium carbonate is added to neutralize the citric acid in this concentrated juice, citrate of calcium is formed which is difficult to remove; if sodium carbonate is added instead of calcium carbonate, a disagreeable flavor results; moreover in either case such treatment of the juice might infringe on the pure food laws.

After investigating quite fully the above possible methods of producing a marketable pineapple juice beverage, the writer finally decided to carbonate the juice as is done with cider.

By this process, although the fresh flavor of the pine juice is partially lost, the carbonic acid with which it is charged produces a certain snap which makes it a most agreeable beverage. The citric acid content is practically unchanged, and the natural sugar in most juices is sufficient. Carbonated pineapple juice is as fine a drink as carbonated cider, and in addition carries citric acid which in itself has long been recognized as beneficial to the digestive system. Citric acid is the acid found in limes, lemons, oranges and grape fruit.

If carbonated pineapple juice were put on the market and properly advertised, the revenue from it on the Hawaiian crop would amount to many thousands of dollars annually. The enterprise is worth looking into.

Besides experimenting with the thought of utilizing the juice of the pineapple, the writer carried on other investigations leading up to the utilization of all the waste materials from the factory which consists, as has been pointed out, of rinds, pulp from the grater, cores, ends and a large quantity of juice.

It was estimated that one ton of refuse, if subjected to pressure, would give 1700 lbs. of juice and 300 lbs. of moist pulp. This pulp when dried would weigh about 100 lbs. As a stock food it would have a value, say of 50 cts. per 100 lbs.

From the expressed juice two products might be made—a molasses or syrup suitable for table use, and calcium citrate which has an appreciable value as is shown by the following letter from a large firm of manufacturing chemists in the United States:

PHILADELPHIA, March 6, 1909.

Mr. T. F. Sedgwick, Honolulu, Hawaii.

Dear Sir:—

We beg to acknowledge receipt of your favor of February 19th, together with a white powder, which you state is a precipitate formed when lime has been added to the juice of some of your island fruits.

We sent this sample to our laboratory and have a report that it is a good quality of Citrate of Lime, testing from 66% to 67% Citric Acid. We are sending you herewith several of our circulars explaining the manufacture of Citrate of Lime.

We would say further, for example, that we are today paying, without engagement, £19 10s. 0d. net per pipe of 675 lbs. of Calcium Citrate, testing 64% Citric Acid, and based on exchange of $4.87 this would equal $94.97, or about 14 cents per pound for Calcium Citrate, provided the same tests 64% Citric Acid. * * *

The following is a conservative estimate of one ton of waste material from a pineapple cannery.

One ton of waste material will produce,

Juice	1700	lbs.
Dry pulp	100	“

1700 lbs. of juice will produce,

Citrate of calcium	17	“
Molasses (table syrup)	20	gals.

The value of these products are,

100 lbs. dry pulp	$ .50
17 lbs. citrate of calcium	2.38
20 gals. molasses	10.00
Total	$12.88

On this basis the crop of 500,000 cases would give a refuse worth something like $140,000.

No estimate has been made of the cost of installation for the processes, nor the cost of producing, but in both cases, carbonating the juice and utilizing the entire waste as just described, the processes are simple and good profits would be derived.

Just what other uses can be made of the material now going to waste from our pineapple canneries it is difficult to say, but with the spirit of investigation that at present is identified with all industries, it is fair to say that within the next five years the pineapple packers of Hawaii will be deriving dividends from what they now are forced to throw away.

The recent effort to secure funds for a monument to Kauikeaouli (Kamehameha III.), recalls an attempt made in 1855 to the same purpose but by public subscription rather than from public funds. A well attended meeting called by the "Committee of Thirteen" convened, and organized with many officials to report in three months' time and subscription lists to close at the expiration of eight months from date of the meeting. The records fail to show any report thereon, so the effort must have "died a-borning."

EARLY TOBACCO CULTURE IN HAWAII.

A Brief Historic Sketch.

THE promising outlook attending the cultivation of tobacco on the island of Hawaii must be very gratifying to the promoters and shareholders in the established plantations, as also to all advocates of the diversified industry movement, the crops and returns therefrom this past year already exceeding the estimate set forth in launching the new enterprise, so as to warrant the extension of the planting area and curing barns for the scientific care and treatment of the leaf. A shipment each of several tons leaf tobacco from the Kona and the Hawaii Tobacco Co.'s this year, is reported to have met ready sale in New York at very satisfactory figures; the leaf being of excellent quality and well cured received favorable notice of eastern buyers.

Not a little inquiry has been made from time to time relative to the earlier effort in tobacco culture in these islands and reasons for its failure. This inquiry arises partly, no doubt, from the historic interest in the subject and partly the desire to profit by the mistakes of the pioneers.

Unfortunately the information available on the subject is fragmentary; nor is there anywhere set forth the reasons for the suspension of all effort in this agricultural enterprise, though there is evidence to indicate a want of sufficient knowledge of the subject by the pioneers in the cultivation of the plant, or curing of the leaf, or both, whereby it was eventually recorded a failure. Briefly stated its history is as follows:

The island of Kauai is credited with the enterprise of first systematic attempts in tobacco growing (as it was in sugar, coffee and other agricultural effort), which was in 1851, possibly earlier, and the valley of Hanalei was the first tested locality, in which venture Messrs. Wundenburg, Bucholz and Gruben were the pioneers, followed very soon after by J. R. Opitz at Waimea. No mention is made of the kind of seed sown at the outset, or grade of tobacco sought to be cultivated, and the inference is that the effort was made from the common product of the islands that was grown in every hamlet, so widespread had become tobacco culture among the Hawaiians since the first seed was sown here in 1813, January 11th, by Don Marin. This impression is strengthened by the fact that introduced seed of Cuban and American grades were obtained through the offices of the Agricultural Society, in 1853, and were left for distribution at the Polynesian office.

This initial systematic attempt had the kindly interest of several of the prominent citizens of the time, and the supporting aid of the Royal Hawaiian Agricultural Society, which organized in 1850. To its "Transactions" we are indebted for most of the historic data available, as embodied in addresses of its presidents and secretary, and reports of special committees on the subject.

At the formation of the Society, Judge Robertson, in his paper on "Tobacco Culture," remarked that "the tobacco raised on these islands is said by the Mexicans and Californians to be of excellent quality. It certainly possesses a flavor superior to that of two-thirds of the cigars imported into our market. It will grow, I think, almost anywhere on these islands. I have seen considerable quantities of it growing in some parts of Hawaii where it would have puzzled a goat to have found a blade of grass. There are thousands of acres of barren land in this kingdom that are suitable for nothing else that I am aware of but raising tobacco."

At the annual exhibition of the Society in 1852, President Lee, in his opening address, refers to the infant industry and its promoters as follows:

"A new enterprise has been recently undertaken in the systematic cultivation of the tobacco plant, and for its encouragement the Society has offered premiums. During the year 1851 the cigar imports of Honolulu alone represented an expenditure to the consumer of $30,000, to say nothing of chewing or other tobaccos. * * * It is said * * * that our soil and climate are well adapted to its growth, and that we are not here, as elsewhere, subject to the ravages of the tobacco worm. If this be true, why not save this amount annually expended for cigars, and export half a million's worth every year."

Mr. J. R. Opitz sent in to the exhibition that same year his first lot of Hawaiian made cigars from island grown tobacco for which he was awarded a premium, as also for the best two pounds of cured tobacco, but we do not find any report of the judges thereon.

Difficulties beset the planters in the windward district, which early proved its unsuitableness for the enterprise, particulars of which are gathered from a communication by Judge Lee in the "Polynesian" of July 17th, 1852, wherein Mr. G. Wundenburg's attempt in tobacco growing at Hanalei was reported a failure, as was also the like effort of Messrs. Bucholz and Gruben in the same valley, through the depredations of a species of cut worm. From this experience it was said that tobacco could not be grown to any profit at Hanalei owing to the great humidity of the soil and luxurious vegetation which kept the ground filled with destructive insects. The "tobacco worm," so fatal in other tobacco-growing countries, was not observed, but a much smaller insect of the "cut worm" species was met with whose ravages defied all attempts at their destruction. Nine nurseries of the plant had been eaten up by the voracious insect since May, 1851. The young plants were raised in boxes, and carefully tended up to the time of transplanting, and upon setting them out the whole field was destroyed in the course of two days. Dr. Newcomb, in his paper on the subject, reported "a small worm of about one inch in length, which in the rainy portions of Kauai infests the tobacco plant and often proves quite destructive, eating its way into the stalk and producing its death. From the samples of tobacco and cigars, the produce of that island, no doubt need be entertained of its becoming a profitable and successful staple of the islands, in which case too much care in studying the habits of this insect cannot be employed."

In 1852 Bucholz and Gruben moved over to the Waimea district to engage in its culture where Mr. Opitz was already establishing himself, and at the time of Judge Lee's writing they were said to be "prosperously engaged and no doubt that with industry and prudence they would meet with success."

Mr. Bucholz evidently retired early from the venture as no further reference is made to him in connection therewith, though a little later a Mr. Archer is interested with Gruber in his tobacco plantation, located at Mana.

From Mr. Wundenburg's experience, as already mentioned, he presented the following views on tobacco growing, some points of which differ materially from present day knowledge on the subject: "I have been examining where it will grow best and find that it is most advantageously cultivated in those places which are unfit for the growth of every other thing. All that tract lying between Koloa and Waimea and beyond, on Kauai, will be found to grow the finest of tobacco, of excellent flavor, provided proper knowledge is exercised in the treatment of the plant and cutting it at the proper time. To learn this has cost me much trouble, and it is impossible to tell the proper time by the appearance of the plant.

"All the leeward sides of the islands contain many tracts of land exclusively fitted for its cultivation, but the windward sides furnish no good places for the growth of tobacco except in a few spots in barren ravines well sheltered from the high winds. Where it grows the finest, as at Waimea, only one good crop can be raised in a year."

Following the exhibition in 1852, the first marketed cigars was received in Honolulu August 17th of that year, the consignment being 10,000 Hawaiian Regalias from J. R. Opitz and offered for sale by H. Hackfeld. Twenty thousand were also received at the same time by Aldrich & Russ. These cigars were put up in cedar boxes of 250 each, neatly papered, with a printed label in English and Hawaiian. Mr. Opitz estimated his product at 200,000 from three acres of ground. These cigars were rather large for popular sale and the suggestion was made that a smaller size be manufactured to suit the public taste.

At the third annual meeting of the Society, in 1853, not a little attention was devoted to the new industry whereby further insight into its history is obtained. The president in his address says: "The cultivation of this plant has not progressed sufficiently far to determine whether its production on a large scale will prove profitable or not; but I know of no reason for discouragement. Guano is used as a manure for this crop with great advantage in Cuba and the United States, and is said not only to produce a more rapid and vigorous growth, but a larger and finer leaf." Corresponding Secretary John Montgomery in his address, in reviewing our possibilities, has the following:

"No plant is more congenial both to our soil and climate than tobacco, or more easily capable of being made an important and valuable article of export, and yet, strange to say, its culture has hitherto been so much neglected, that instead of exporting several thousand dollars worth yearly, we actually export not tobacco and cigars, but what is more valuable to us, $30,000 to pay for its purchase for our consumption. From a party who has recently visited the plantations of Messrs. Opitz and Gruben I learn that notwithstanding the unusual drought of the season, they have good crops of tobacco of first quality, equal in flavor to the boasted produce of Cuba; and that in all probability over half a million of prime cigars will be turned out this season. San Francisco and Australia will afford a ready and remunerative market for all the good cigars we can raise here, and as precautions have been taken to avoid in future the errors which admittedly made last year's cigars inferior in quality, I trust to see this important branch of agricultural industry fully and profitably developed."

The report of J. F. B. Marshall, vice-president for the island of Kauai, gives us fuller information on the new industry, as follows:

"There are now two plantations for the culture and manufacture of tobacco on this island. They are both at Mana, near Waimea. One is carried on by Mr. J. R. Opitz, the other by Messrs. Archer & Gruben. The tobacco raised by them is said to be very superior, and the enterprise promises to be very successful. The tobacco is to be manufactured into cigars on the plantation.

"I am indebted to Mr. Archer for the following particulars of these two plantations. Mr. Opitz has six acres, and Archer & Gruben five acres growing, of which two-thirds is already housed. From the want of rain this season on that side of the island the tobacco crop of the natives has entirely failed.

Messrs. Opitz, Archer & Gruben have probably succeeded in raising a crop by their improved method of agriculture, aided, perhaps, by the better adaptation of their soil, which is remarkably deep and rich. It is a singular fact, that during the almost unparalleled drought of the year before last, this region had more rain than during the last year, when all other parts of the island were blessed with frequent and copious showers. The crops of these two plantations have suffered from the drought, but it is encouraging to reflect that they have succeeded in raising an average crop in a season so unfavorable. These two plantations contain about 250 acres each. The crop now coming off, it is estimated, will produce about 300 M. cigars for each plantation. Neither of these gentlemen have had any experience in the raising of tobacco except what they have acquired on Kauai, and as I believe this branch of agriculture is destined to be an important one here, I would suggest that means be taken by the Society to procure for them and others who may be about engaging in the business, such information from tobacco growing countries, as to the best method of raising and process of curing, as may be useful to them. The treatment that tobacco receives from the time the crop is housed is not thoroughly understood, and any information that the Society can obtain on the subject would be of great value."

Among the list of premiums for the Annual Exhibition that year, tobacco is down for $10.00, or a cup, for the best half acre with account of its cultivation, and a like sum, or object, for the best 100 cigars, a specimen of 10,000.

Notwithstanding the above favorable report interest from some cause not shown appears to have waned from this point, for Mr. Opitz shortly afterwards discontinued his labors on Kauai, whether by transfer of his plantation to Archer & Gruben, or abandoning it, we do not learn, but in May, 1855, he opened in Honolulu a coffee saloon and cigar store, on King street, adjoining the Seamen's Reading Room.

It is possible that as Mr. Opitz was the cigar maker of the enterprise, that part of the industry could be carried on to better advantage here than in the distant district, which was done for awhile.

At the Annual Exhibit of 1855 Messrs. Archer & Gruben was awarded the Society's premium for the best sample of tobacco, representing a field of thirty acres. Two small samples of Hawaiian cigars were also exhibited, put up in neat business like form, but not in sufficient quantity to entitle them to a premium.

Here endeth the first chapter of the tobacco industry; for without much delay the plantation was discontinued and the senior partner departed for a ranch life in the Colonies. Without positive knowledge on the subject, the general impression prevailed that want of capital to carry the stock over the seasoning period, as also a rank flavor in the cigars, which affected both their sale and market value, had largely to do with bringing the enterprise to a close.

Interest in the subject has been awakened from time to time, and attempts at a revival of the industry, notably in 1863, and again in 1870, but little more than drawing public attention to the pioneer effort resulted.

In 1863 a Mr. F. Elbing prepared samples of cigars, chewing and plug tobacco from the native plant, but was said to lack aroma from their freshness. The effort of Opitz and Gruben was at this time referred to as having succeeded in making very choice cigars and though deficient in the aroma of the imported, yet met a fair sale. Their manufacture was found to be expensive—as in all pioneer effort—and it required capital to allow the cigars to "season," or acquire the rich flavor desired, and had those acquainted with the culture and manufacture of tobacco only persevered we should ere this have been able to produce tobacco and cigars of some kind sufficient for local consumption.

About this same time an effort was made by one or two foreigners in Kohala, in tobacco culture, the heiau of Mookini, at Puuepa, serving them for their nursery, but they found the poko's and high winds against them. A few years later tobacco growing at Hana, Maui, was commended for its quality, and success assured if persons of experience and capital would only take hold of the project, was the expressed belief of one who had had several years' experience in cigar manufacture.

WATER DEVELOPMENT.

Mountain Tunneling.

By Carl Waldeyer.

IN summing up the industries and resources of the Hawaiian Islands due recognition is invariably given to the important enterprises having to do with the development and conservation of water.

A description of the great irrigation systems takes note of three important methods of providing water: That of the extensive ditch system which lead water from the distant mountain streams to the cultivated areas; that of the immense storage reservoirs, which conserve the water of streams, and particularly the storm waters, and that of the great pumping plants which pump the water from sumps at sea level, and from artesian wells, to the necessary levels for irrigation purposes.

In these descriptions water tunnels are mentioned in a general way, referring, in some instances, merely to the tunnels on ditch lines which are carrying the water of mountain streams, and in some instances to tunnels which have been driven from sumps below sea level, or from the bottom of deep gulches just above sea level. Very rarely has space been given to the class of tunneling which will be described in this article.

An attempt will be made here to describe that branch of water development that comes under the head of Mountain Tunneling, and it will be shown that this branch of the industry is in a class by itself.

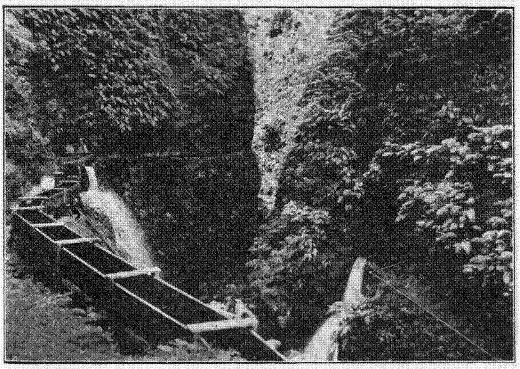
It early became evident that there were immense underground storages of fresh water at sea level on most of the Hawaiian Islands.

On the island of Oahu particularly the true artesian condition was found to exist. It required very little preliminary exploitation to locate a supply of fresh water at sea level, either by boring wells, or by tunneling, or by a combination of the two methods.

The water, of course, after being located, had to be pumped to the high levels for irrigating purposes.

In mountain tunneling the tunnels have to be located, generally, above an elevation of 2,000 feet, so that any water developed will flow by gravity into the irrigating ditches above the highest cane levels.

The tunnels have also to be located at points in the mountains where the difficulties of leading the water to the cultivated areas are not too great. The arbitrary conditions imposed on the enterprise, are, therefore, very severe, considering the elevation demanded, and the conditions imposed general location



VIEW SHOWING TWO SUCCESSFUL TUNNELS BEING DRIVEN INTO THE PALIS ON OPPOSITE SIDES OF A STREAM. THESE TUNNELS ARE DELIVERING 5,000,000 GALLONS PER DAY.

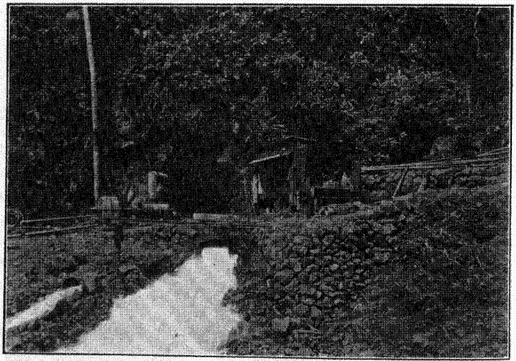
Some attempts at mountain tunneling have been made on all the principal islands of the Hawaiian group, but only on the island of Maui has the venture been attacked in a systematic, vigorous and extensive manner, and for this reason Maui, in offering her balance sheet on Water Development Account can show a most satisfactory balance on the right side of the ledger.

There are, in the West Maui mountains, a dozen water tunnels, averaging about 2,500 feet in length and being in elevation from

1,500 feet to 3,000 feet above sea level. These tunnels are driven from the depths of eight of the principal valleys of West Maui.

The aggregate constant flow from these tunnels is over sixteen million gallons daily. This water is a perpetual flow, requires no pumping, and no yearly outlay for maintenance. Most of the water is at a high enough elevation so that it can be used for power purposes before being delivered at the level required for irrigation.

None of these tunnels mentioned has reached the limit of their yield. Much of this work was done in a wasteful and unintelligent manner. In other words—if the work were to be done over again, and the knowledge now at hand applied, the results would be far greater, at much less expense.



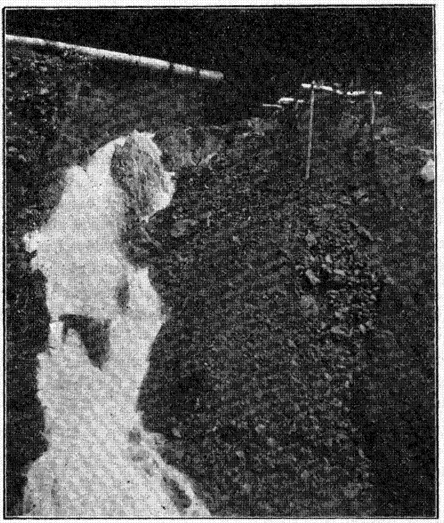
THIS TUNNEL IS ABOUT 2,500 FEET IN LENGTH. THE DEVELOPMENT HERE IS OVER A MILLION GALLONS PER DAY, AND THE FLOW FROM THE TUNNEL IS FOUR TIMES AS GREAT AS THE NORMAL FLOW OF THE STREAM INTO WHICH IT EMPTIES.

In spite of all this the total cost of all this work described is much less than 20 per cent. of the value of the water developed.

There is considerable water development work now under way on Maui, and more projected. It is safe to predict that this new work will show much more favorable returns than that described.

Most of these tunnels are yielding a steady flow much greater than the normal flow of the streams into which they feed, proving conclusively that there is a real development and that these tunnels are not merely "robbing Peter to pay Paul."

Water development on the continents is now a recognized, legitimate industry. Almost every government in the world is now engaged in scientific exploitation for artesian waters. Even the deserts of Arabia and the Great Sahara are yielding gushers of pure water to the tapping of the geologist's hammer.



THIS TUNNEL, WITH BRANCHES, IS 3,300 FEET LONG, FROM WHICH FLOWS 4,000,000 GALLONS OF WATER PER DAY, THAT HAS NOT VARIED SINCE 1904. THE NORMAL FLOW OF THE STREAM HERE BEFORE THIS WATER WAS DEVELOPED WAS NOT MORE THAN HALF A MILLION GALLONS.

In a general way it may be stated that the artesian conditions of a region depend upon the geological disposition of the underlying strata.

This rule is applicable for the great continental bodies of land, but it can not apply to our volcanic islands, as we have here no strata, as geologically understood.

It an expert geologist had thoroughly examined the island of Oahu thirty years ago he would never have estimated that there was an artesian storage of fresh water, underlying this island, that would yield, to pumping, a constant flow of over 300,000,000 gallons per day. This condition, as now known to exist, could never have been determined by reasoning from cause to effect. At this date, knowing the effect, it is not difficult to determine the cause.

In the matter of mountain tunneling the geologists now stand in the position they once assumed in regard to our artesian deposits. They declare that there are no geological conditions by which one may be guided in the search for underground water in the Hawaiian mountains.

The writer maintains that, traveling back from effect to cause, as was done in the case of our remarkable artesian deposits, sound geological reasons can be given to explain the existence of the underground streams at high elevations, and that, once understood, the usual geological methods can be employed in locating tunnels with an almost positive guarantee of success.

A geological discussion can not be undertaken in this article, but the following explanation is offered and will probably be as readily accepted as a more scientific one:—

A certain ancient philosopher on being cornered for an explanation of a disturbing problem in physics, gave the answer that nature abhors a vacuum.

It might be said in explanation of the matter under discussion, that nature abhors waste,—and that she has more than one method of conserving her resources.

When Honolulu became known to the early foreign traders it was little more than a barren waste; its primitive grass huts and sparse trees being confined to the shore and along the banks of Nuuanu stream. This was the description given of it by one who first visited here in 1808 and subsequently returned to identify himself with its growth and prosperity.

PLANTATION LABOR TROUBLE OF 1909.

Strike of Japanese Laborers on Oahu.

MENTION was made in the Retrospect of our last issue of the agitation among Japanese plantation laborers, or certain of their papers claiming to represent them, for an increase of wages. One of their journals of this city became notorious as the mouthpiece of the Higher Wage Association—so called—and, inflated in the notion of its importance sought by intimidation, vituperation, vile epithets and threats, to urge concerted action among all Japanese laborers throughout the islands to demand increased wages, hoping to cripple the sugar industry into a position forcing accession to their demands. The scheme developed itself in due time and at one period treatened to involve all the plantations of Oahu, seven in number, one after the other, and in their striking they all alike went out before presenting demands, or alleging any grievance to their respective managers. And their complaints were of stereotyped form, comparatively, evincing the work of outside agitators urged upon laborers regardless of differing conditions. Under such circumstances many laborers were forced to strike against their will and in a short while lack of cohesion in the ranks was manifest.

The main cry of these striking Japanese laborers backed by the officials of the Higher Wage Association in their demand for $1.00 per day, was, that $18.00 per month was insufficient for their sustenance; that their improved condition called for better clothing; food was enhanced in price and educational and religious privileges were to be maintained, etc. It developed, however, that ample opportunities by contracts for special work could be—and were—availed of by the industriously inclined whereby much larger sums per month were paid. For the year 1908 the average wage paid the Japanese laborers on the Ewa Plantation—men, women and children—was $21.80 per month of 26 days, and for the month of April just preceding the strike the average earnings of each laborer was $21.16 for the 26 days work. A similar showing was presented by Kahuku, Waialua and other plantations, thus proving the flimsiness of their complaint. While $18.00 was the minimum basis for plantation help per month, it was only the ne'er do well's that continued or remained at this figure.

Against this united attempt to dictate labor terms to the planters the Planters' Association naturally took a concerted stand in defense of their interests. No concessions would be made nor terms considered while the laborers were out on strike, nor would the Higher Wage Association be recognized or treated with. At one stage of the controversy the right of a plantation manager to reduce his force of laborers from whatever cause was questioned, and demand made that the curtailed men be reinstated till the question of wage was settled.

The strike first took place on the Honolulu Plantation, at Aiea, May 10, and — quite characteristic of Japanese—made itself known not by any demand, or statement of grievances, but refraining from entering upon their accustomed duties, and later, in some instances, forcing other nationalities to quit work likewise. From Aiea its influence or infection took hold on the Oahu Sugar Co. adjoining, then to Ewa, and Waialua, and so on, so that by May 24th there were 7,000 out on strike, the movement being timed to cripple the industry as much as possible in the expectation that thereby would the planters be forced to yield. But the principle involved being not so much the matter of wage as it was the direction and control of plantation interests left the planters but one course to pursue; maintain their ground at whatever cost and lessen their dependence on any one race, as hitherto. The strike occurring at the busiest time of the season, and without notice, the call for laborers to take up and continue the work drew together a large force of strikebreakers of various nationalities from this city, most of whom went back and forth by special trains daily, for which service $1.50 per day was paid competent hands.

Much patience and forbearance was exercised on each of the plantations toward the strikers who occupied plantation premises and continued to enjoy employes privileges for weeks, and in more than one instance threatened to resist eviction.

Several attempts were made by prominent Japanese, including their Consul, to dissuade the strikers from following the dictates of mischief-makers and retain their places on the several plantations instead of standing by and seeing them filled day after day by train loads of strikebreakers from the city. But they were not disposed to listen to reason; they were too much the dupes of those of their own race who were controlling them for their own gain.

In only a few instances were attempts made to interfere with independents entering upon the work they had abandoned, but not so with any of the strikers who deserted the ranks and sought to return to their employers, as several learned to their injury and threatened vengeance, and through which has come the several riot trials that have taken place. So strict a surveilance had the officials of the Wage Association over the body of strikers that their movements were controled daily by a system of permits that set our laws and authorities at defiance, so that injunction proceedings were resorted to against the Higher Wage officials to prevent their interference with workmen, and for a time police attendance was necessary to guard laborers and avoid a repetition of the riot of June 8th when a gang sought to resume work.

It is fortunate this movement was attempted on and confined to the Island of Oahu. It developed, as part of the plot of the Higher Wage Association, that while the test should be made here it was necessary, in order to secure contributing funds from their fellow laborers on the other islands, that no disturbance occur among them till those of Oahu won out. It was said that the scheme also included the domestics of Honolulu, but their weekly tribute to the cause of the plotters to provide food for the idlers changed this part of the program, on reconsideration. We do not learn that the Kauai laborers supported the movement or gave it financial aid, but a number on Maui and Hawaii were in deep sympathy with it and contributed to the strike fund though not to the extent alleged by the agitators. Some were reported still doing so long after the strike was abandoned.

A number of the plantation managers on Hawaii, and possibly on Maui, received from their Japanese laborers a list of their alleged grievances and demand for higher wage, in keeping with the movement on Oahu, some of which could be considered while others were denied; but there was no strike among them.

Early in June a disposition to return to work was manifest among the strikers and at one gathering to consider the situation all but 90 out of 1800 Ewa men voted to resume their places, and like reports followed from Waialua and Kahuku as to the attitude of their men. This unconditional surrender was vigorously opposed by the Higher Wage officials and their mouthpiece, the

"Nippu Jiji," whose brazen audacity and defiant utterances led to the arrest of eleven strike leaders including the editor, and from the evidence secured the authorities felt warranted in charging four of the ringleaders with conspiracy to murder. The jury trial that followed, which was long and hard fought, resulted in a verdict of guilty in the third degree, and sentence of ten months in jail and $300 fine were imposed on F. Makino, Y. Soga, M. Negoro and Y. Tasaka.

An unfortunate outcome of the strike movement, yet a natural result of the inflamatory utterances of the "Jiji" in its vilification of Editor Sheba, of the "Hawaii Shinpo," for his steady opposition to the scheme and his expose of the views and tactics of the plotters, was the murderous attack on him in broad daylight by one T. Mori, a high wage fanatic from Wailuku, Maui, whose only regret, he said, was that he was not permitted to complete his job. Fortunately timely help rescued Sheba and hastened him to the hospital and arrested the would-be assassin.

For several months the courts have been kept busy on cases growing out of this attempt to control the leading industry of the territory. The first riot trial after dragging along for weeks resulted twice in a hung jury, not from lack of evidence for conviction so much as socialistic ideas, and a like miscarriage of justice followed in another case. Even the Mori trial for attempted murder, though confessed, reached a verdict only on a compromise rider in recommendation of mercy which the judge ignored with scathing rebuke.

The outcome of this strike movement, while calling for great expense to the Planters' Association and the Territory, has the promise of proving a blessing in disguise. Too long have the vested interests of the territory permitted the dominating nationality to insiduously disposes others in the varied lines of higher grade work. This cause more than any other is assigned as the reason for lack of sympathy for and with the planters in this struggle. But their battle for a principle, vital to them, as has been said, "includes in a larger sense the welfare of every citizen of the territory." Counsel for the prosecution in the conspiracy trial in addressing the jury stated that "the strike has, in reality, been the best thing for Hawaii that could really have happened; having resulted in a movement which will, in time, mean the end of Japanese domination of the labor situation and result in the introduction of men who will become citizens of the United States."

Upon the disclosure of the higher wage plot, immediate steps were inaugurated by the Immigration Bureau to secure laborers from various nationalities that should assimilate with those here and become citizens. To this end Commissioners were sent to the Philippines; to Portugal for the re-opening of immigration from that quarter, and to Siberia for the selection of a number of Russian families from that section desirous of settling in Hawaii. At this writing the "advance guard" of Filipinos and Russians have arrived, and one ship load of Portuguese are en route. And so far as now seen all signs point to a satisfactory solution of the labor troubles of 1909.

COMMENDABLE PROMOTION WORK.

Versus the other kind.

SOME months since a prominent Federal official, desiring a series of photographic views typical of island conditions, very wisely drew the line against that class which for years past have held prominent place in photo galleries and post card exhibits, and too frequently used to illustrate press and magazine articles as characteristic scenes of everyday Hawaiian life, when in fact they are a libel on the territory; fully as much so as the hula exhibits that have been attempted here and abroad from time to time by money making schemers. Let us hope that the suggestion in this mild request will cause the public to realize the injury this class of pictures are doing the islands and refrain from disseminating anything of a derogatory and untrue character.

In like manner exceptions may very justly be taken to another article specially prepared as a souvenir for the "tourist trade" in the so-called Hawaiian doll, with kinky hair and a style of dress unknown here. Hawaiians are noted for their straight, black hair, and the fringe or grass skirt is not so much the typical national dress of even the ancient days as would be the pa-u of kapa which gave way to civilization some eighty-five years ago. Better still would be the native holoku or "Mother Hubbard" gown. The grass skirt is an adaptation by the hula dancers of the Micronesian style, its introduction dating back about fifty years.

There are certain Hawaiian scenes that have been sought for to meet the demand of visitors, wherein the subjects have posed specially for the occasion, with the result that "national traits" are overdrawn; magnified, and, hence, unnatural. This was so marked in the poi-eating moving picture scene shown last winter in this city as to create a feeling of revulsion at such evidence of gluttony. It was true to the camera, but it was a distortion for the occasion which drew forth a legislative protest against its exhibition and request for the destruction of the film. Remarks made on the occasion indicated that the people wish no representation of themselves abroad derogatory to their general character as seen in everyday life. It is one thing to laugh at, and enjoy for the moment, some absurdity or trait of character assumed for the occasion, but to present such as typical of the race for the amusement of strangers is quite a different matter.

Public opinion should deprecate these mispresentations, even though the call for such by a certain class of tourists hold forth inducements for photographer and post card publisher to supply their demands. We enter protest at the same time also, to the extension of the variety of souvenir postals within the past year by misnaming a number of South-Sea Island views as of Hawaii, the publishers evidently presuming on the ignorance of their customers. Fortunately there are dealers who will not handle any of the questionable and falsely named souvenirs here referred to, and hope for the fair name and fame of these islands that they will be withdrawn and the negatives destroyed, lest a coming legislature take action again looking to censorship of the whole picture business.

Broughton in his visit to Hawaii in 1796, in the *Providence*, added a male and female goat to those already here, leaving them in the care of John Young, with a breed of geese and ducks. The first lieutenant also spared them his pigeons, and some grape vines from Port Jackson were planted during their stay.

HILO AND THE ISLAND OF HAWAII.

(Contributed).

THE Island of Hawaii is known locally as "the big island" by reason of its preponderating size over all the others of the group. Its area is nearly double that of all the other islands combined, being 90 miles long by 74 miles wide and containing 4,015 square miles, as against 2,484 for all the others.

Hilo, the principal town of Hawaii and the second largest in the Territory, is situated on the northeastern coast about midway between the north and south points, on the windward side. It is approximately 200 miles from Honolulu and has a population roughly estimated at 5,000, and in the country north and south, and naturally tributary to it, are about 27,000 more. Its pseudonym of "The Rainy City" is hardly deserved, for though the rainfall averages about 150 inches a year the precipitation is generally at night, having the effect of lowering the temperature about five degrees below that of Honolulu and giving a tropical luxuriance to vegetation which is one of the glories of the section.

BEAUTY SPOTS ALONG THE WAY.

Of superlative beauty is the northeastern coast of the island of Hawaii, which for more than sixty miles is rockbound without a safe harbor or protected bay. For the greater part of this distance the plateau which runs back from the summit of the precipice is covered with sugar cane, the bright greens of whose fields blend into the darker shade of koa and fern forests, which continue up to nearly 10,000 feet on the mountains which form the central mass of the island.

STEAMSHIP COMMUNICATION.

Until very recent years Hilo had no steam communication with the outside world except through Honolulu, and there was but one steamer a week between these points. Today there are two steamers a week, and there is a likelihood that the Inter-Island

Navigation Company may soon inaugurate a tri-weekly service. In addition, there is now a regular and direct steamer service with San Francisco, maintained by the Matson Navigation Co., and a bi-weekly steamer service with New York, either direct around the Horn or indirect by way of the isthmus of Tehuantepec, by the American-Hawaiian Steamship Company.

One of the drawbacks to the development of Hilo as a shipping port has been the fact that its harbor was little more than an open roadstead, where large vessels could not lie at wharves because of the heavy swell.

The need of a safe and protected harbor is therefore one of the most urgent requirements. Outside of Honolulu harbor, which is of small size and incapable of material enlargement, and of Pearl Harbor, which at present is not accessible to any but very small vessels, Hilo harbor is the only one in the North Pacific. To meet this need Congress has appropriated the sum of $400,000.00 for beginning the construction of a breakwater to enclose this harbor, giving a protected area of 3,000 acres. On this work the people of Hilo and the adjacent districts mostly pin their hopes, as it will insure the creating of a good harbor with all that that means; drawing more trade, more people and creating new business.

BUILDING THE BREAKWATER.

The United States has perhaps undertaken no work of a public improvement nature in the Hawaiian Islands, the benefits of which will be so great and pronounced, as in the building of the Hilo breakwater. The work is only fairly begun and already its influence is felt and may be noted in the quickening growth and development along this island for a distance of a hundred miles. Plans for new, quicker and cheaper transportation both by land and sea are being rapidly worked out. New industries, scarcely thought of a few years ago, are in progress and nearly every business organization has some plan of enlargement and every individual some plan for further development and improvement of the surrounding country. The capital of the islands is looking for investments in and around Hilo every day, and the Pacific Coast from Canada to Mexico is looking and inquiring about Hilo and its back country.

The last ANNUAL mentioned the contract for the construction of the breakwater having been awarded to D. E. Metzger, toward which $400,000 had been appropriated, with a brief description of its dimensions and massive character of the projected work.

BEGINNING THE WORK.

It was late in October before the actual work of putting stone in place in the breakwater began. Nearly four miles of railroad had to be graded and built across lava flows in order to make connections with the tracks of the Hilo Railway Company over which the stone is hauled. Track materials, cars, cranes, derricks, locomotives and quantities of other machinery and equipment had to be ordered and shipped from the eastern parts of the United States. Some of which had to be specially built, which, of course, took time. Hundreds of details required careful planning and as careful wa'ching to avoid months of delay. Considerable development work had to be done at the quarries in Puna; water provided; buildings constructed, besides the usual large amount of preliminary work necessary to the undertaking of a construction work of this magnitude, on account of the great distance from the larger markets.

PROGRESS IN ITS CONSTRUCTION.

Since October, the work has steadily gone forward, with the exception of a delay during the month of January, due to an accident to the crane at the breakwater. At the present time the jetty is built out into the sea a distance of over 900 feet. It is estimated that the present contract will complete about 2,500 feet, or a little over one-fourth the projected length. At the present time it requires about 65 tons of stone to build one foot.

The U. S. engineers' plan, covering the entire breakwater, estimates the cost at $1,700,000, and calls for a length of 9,700 feet, beginning at the shore, at a point about two miles east of the main part of the town of Hilo and extending out across the opening of the bay upon a submerged reef, leaving a deep channel entrance beyond its end over a half mile wide. When completed the breakwater will enclose and protect from the northeasterly swells a body of water approximating 3,000 acres, and make one of the finest and roomiest of deep-water harbors.

The submerged reef upon which the breakwater is being built runs in the shape of a crescent, in a position reversed to the crescent of the bay. It is nearly half a mile wide and the breakwater is located along its inner or harbor side. The average depth of water over this reef is about 23 feet, with occasional pockets of 40 or more feet depth. Inside the reef, the depth of water is in most part over 32 feet, with sand bottom and easy dredging.

THE PRESENT APPROPRIATION.

The breakwater is now nearly 1,200 feet long. After many delays at the factory and in shipping, the contractor recently received about 100 tons of new machinery which will soon be put to work. This will increase the rate of progress at least fifty per cent. and the present appropriation will likely be exhausted before the end of 1910.

INCREASED MOVEMENT OF TONNAGE.

In spite of the drawbacks incident to the lack of a still-water harbor Hilo enjoys a very considerable trade, and with the completion of the breakwater and the opening of the Panama canal the commerce of the port will materially increase.

The following table shows the movement of deep-water vessels to and from the port of Hilo during the fiscal years 1908 and 1909:

Deep-sea Vessels Arriving and Departing at the Port of Hilo During the Fiscal Years Ending June 30, 1908, and June 30, 1909.

YEARS	ARRIVING		DEPARTING				TOTALS	
			To American Ports		To Foreign Ports			
	No. Vessels	Net Tonnage	No. Vessels	Net Tonnage	No. Vessels	Net Tonnage	No. Vessels	Net Tonnage
1908	65	165,220	44	56,086	20	107,258	129	328,564
1909	70	229,935	50	113,169	22	118,413	142	461,517

In addition to the over-seas commerce, shown in the above table, Hilo enjoys a very considerable traffic between local ports, carried on by the steamers of the Inter-Island Steam Navigation Company. For the fiscal year ending June 30, 1908, there were 996 vessels of 348,156 tons, and for 1909, statistics for which are incomplete at this writing, are given approximately at 982 vessels of 363,644 tons.

THE HILO RAILROAD.

The Hilo Railroad was financed and built entirely by local and American capital, and is equipped and operated entirely on American standards. Operating fifty miles of mainline and ten miles of sidings and branches, it is the only broad guage railroad in the islands. It gives access to approximately 40,000 acres of fine agricultural lands and permits the opening up of an equal area situate at its terminus at Kapoho, district of Puna. Passenger trains take the traveler directly from the steamer landing in Hilo to Glenwood, a distance of twenty-two miles and only nine miles from the crater of Kilauea. An extension of the main line from Glenwood to the crater is contemplated, thus giving easy access to one of the world's greatest wonders. On the way to Glenwood the eye of the traveler is delighted by a sight of one of the finest sugar estates in these islands, and by glimpses of the Hawaiian forests in their primeval and unsurpassed beauty. These forests, with judicious limitations, are now yielding to the expansion of the sugar, and other industries, their products being converted into lumber of exceptional hardness in the shape of railroad ties, etc., large exports of which are now being made to the mainland of the United States.

PASSENGERS AND FREIGHT.

During the fiscal year of 1909 the Hilo Railroad Company transported 75,324 passengers traveling in the aggregate 1,052,839 miles.

During the same period the railroad hauled 118,651 tons of merchandise classified as follows:

Agricultural products, 26,647 tons; animals, 957 tons; mines and quarry products, 32,402 tons; forest products, 35,854 tons; manufactures, 3,266 tons; merchandise and provisions, 7,578 tons; fertilizers and miscellaneous, 11,947 tons.

The Hilo Railroad operates its own car shops, machine shops and foundry and employs in total 300 men; paying out approximately $100,000 per annum in wages and salaries.

EXTENSION OF THE HILO RAILROAD.

Depending upon the construction of the breakwater, and of equal importance with that great work in the development and prosperity of Hawaii, is the construction of the Hilo Railroad extension to the north, tapping the rich country between Hilo and Hamakua, and bringing the traffic of that fertile agricultural country to the port of Hilo. An idea of the magnitude of this undertaking may be gathered from the fact that the estimated cost of the first fifteen miles is set down at $700,000. The traveler, coming to Hilo by steamer, is delighted by the unrivaled scenery presented by the north coast of Hawaii; through this beautiful district the railroad will run, making its way through cuts up to 60 feet deep, over embankments of equal and greater height. The trains will disappear at times in the vast canefields, only to come into view suddenly when crossing deep ravines over steel bridges, the erection of which will call for engineering skill of the highest order.

The new railroad will connect with the harbor of Hilo fifteen sugar plantations, whose combined output in 1908 was 120,999. tons. Since every ton of sugar hauled produces from two to four times as much incidental freight, the estimate that this extension will eventually handle 350,000-400,000 tons of freight is a conservative one. The population between Hilo and Kukuihaele is estimated at 22,500; on the basis of the passenger traffic of the present road, this means a patronage by 500,000 passengers per annum.

The vast slopes of Mauna Kea above the sugar cane belt are still awaiting the agriculturist, and since soil and climate stand ready to assist, nothing but lack of transportation has kept this part of the island of Hawaii in the background.

Railroading on the island of Hawaii is in its infancy, and ten or fifteen years hence it is probable that this great island will be entirely belted by a railroad, which, besides bringing about development of an undreamed degree, will afford the visitor to our shores sights worth coming any distance to see.

POSSIBILITIES OF BUSINESS EXPANSION.

The great possibilities of expansion of the business of Hilo are shown by the fact that all of the existing business is done in connection with a territory lying within an average radius of less than 15 miles from the town. The breakwater and the railroad should immediately extend Hilo's business activity to an average radius of 60 miles, to say nothing of the enormous and untouched agricultural possibilities of the Waimea Plains district, with its 100,000 acres of the richest land in the Territory, now used exclusive as a cattle range, largely because of the prohibitive cost and inadequacy of transportation. The rapidly developing business of Kona, which now all goes to Honolulu, should share with Hilo, which is only one-third as far away as Honolulu, as soon as a quiet harbor is assured at this port.

THE SUGAR INDUSTRY.

As on all the other islands of the group, the staple industry of Hawaii is the cultivation of sugar cane. In its production of sugar it leads all the other islands, although the area devoted to this industry is at present limited to the coast area between Hilo and Waipio Gulch, a distance of 53 miles, with two plantations to the south of Hilo, and a small group on the extreme southern point of the island in the district of Kau. There is also one plantation in Kona, on the leeward side of the island, and it is probable that much more could be done with sugar in that section of the island by the development of a water supply for irrigation, as suggested by the Reclamation Service. The number of corporations engaged in the production of sugar on the island is twenty-seven, and its output for 1908 was 180,159 tons.

PAHOA LUMBER MILL.

The Pahoa Lumber Mill succeeded the Hawaiian Mahogany Lumber Company, Ltd., March 24, 1909. It is turning out ties for the Santa Fe Railway Company with which it has a contract for 2,500,000 cross ties and 2,500 sets of switch ties. It also turns out lumber and other products for which the demand is constantly increasing, such as shingles and lumber for cars, wagons, carriages, etc. A dry-kiln is being installed for seasoning this lumber. Since April 1, the mill has turned out 91,407 standard ties, about 622,662 feet of small ties and 101,202 feet of lumber. The mill also operates its own plant for building cars and repairing its machinery. There are about ten miles of railroad track, four locomotives, forty-five cars, and nine logging donkeys. There are about 600 men employed and the pay roll averages about $12,000 monthly. This industry is an entirely new one in the islands.

COFFEE.

The Territory is well adapted to the growth of coffee, the quality produced being of high grade. Several years ago this industry held out large hopes for Hilo, and a number of plantations were started in this vicinity. But owing to the low price of the product, and, in some instances, to unfortunate selection of plantation sites, the industry languished, and is now maintained by only a few planters. The coffee crop of 1903 was the largest ever produced in the Territory, exceeding 3,000,000 pounds, 95 per cent. of which was raised on the island of Hawaii. Owing to the low price of Brazilian coffee, and the consequent abandonment of most of the Hawaiian coffee plantations, the output has fallen off since 1903 to a total exportation in 1908 of 1,310,432 pounds, valued at $157,137, while for the fiscal year 1909 the exportation was 1,763,119 pounds of the value of $211,535. These figures do not represent the total production of coffee in the islands, for the home market is almost entirely supplied by the home product.

The acreage in coffee in 1903 did not exceed 4,500 acres, and since there are 200,000 acres of good coffee land available on this island, it would be possible to expand the industry until Hawaii was produced, 133,000,000 pounds, or 66,500 tons, annually.

PINEAPPLES.

The pineapple industry on this island is only in its infancy, the cannery at Hilo being started only two years ago, while the one in Kona, on the other side of the island, is but little older. The output of these two factories in 1908 was 18,700 cases, valued at about $60,775, and the estimated output for the present year is 24,000 cases, of an approximate value of $78,000. These two canneries are supplied from an area of about 450 acres, and as there are on this island, according to a recent statement of the Land Department, about 100,000 acres of government land suited to the cultivation of pines, it may readily be seen that a great future lies before this new industry, limited only by the market demand. The fruit is usually grown in small patches by small farmers, and the price paid by the canneries is from $12.50 to $20 per ton, the crop yields being from five to ten tons to the acre.

RUBBER.

Rubber as an item of local production has attracted the attention of those who know the possibilities of the Puna district. One company has already established itself without any noise, erected buildings, cleared lands and established a nursery, near the Puna plantation holdings. Trees planted out in 1907 are today from 20 to 24 feet in height. Mr. Haughs, of the government forestry service, has examined the land of the Puna plantation and vicinity, not available for cane cultivation, and reports that it holds several thousand acres of the best rubber lands in the Territory. The Land Department reports 100,000 acres of government land on this island adapted to rubber culture, and if the plantations now started prove commercially profitable, the production of this commodity in Hawaii should bring increased prosperity to the Territory.

TOBACCO.

For a great many years tobacco has been grown on these islands by the Hawaiians for their own use, but it was strong and rank in flavor and of no value commercially. Several years ago the Department of Agriculture established a tobacco experimental station in the district of Hamakua, on this island, for a scientific study of the question, and the results were so satisfactory that two tobacco plantations have recently been started. The quality of leaf grown has proved exceptionally fine, and the outlook is a bright one. The area of government land on this island suitable for tobacco production is given by the Land Department at 30,000 acres. Arrangements are now being made for experimentation with tobacco growing at Hilo where, it has been stated, the climate is especially adapted for growing the Sumatra wrapper leaf.

HAWAIIAN STARCH.

An industry lately started in the neighborhood of Hilo is the manufacturing of Hawaiian pia, better known as starch. Mr. Wm. Conradt has built in Kalaoa, 7 miles from Hilo, a plant on a small scale which turns out about 500 pounds of starch per day, manufactured out of the root of the manioca plant and is, according to the analysis made by the chemist of the U. S. Experiment Station at Honolulu, a far superior article to the starch manufactured on the mainland.

OTHER OPPORTUNITIES.

Guava, papaias and mangoes all grow in profusion in and around Hilo, and all make preserves of the highest quality. These fruits are now growing and simply await the people to make them an added source of revenue to Hilo. It may be that the pineapple cannery will take this business up between pineapple seasons, having a fine opportunity to do so.

With such a rich and interesting country back of it Hilo should possess a much larger trade than it now enjoys, but it has been handicapped in the past by lack of local demand and market possibilities, and even today, though these are considerably improved, they are entirely insufficient to create development and production to any great extent.

LIVE STOCK.

The cattle and sheep ranches on the island of Hawaii are scattered over all the districts except Hilo. From information received at the office of the tax assessor there are, on the large ranches, 43,500 sheep, valued at $60,925, and 69,362 head of cattle, worth $819,130. Smaller holdings will add about five per cent. to these figures.

BUILDING IN HILO.

During the last year, according to reports of the building inspector, 415 building permits were issued and the value of improvements in Hilo were given as $140,481.

CLIMATE OF THE ISLAND OF HAWAII.

The position upon the map of the island of Hawaii, situated at the northern verge of the torrid zone, in the midst of a vast expanse of ocean, is sufficient to explain the many delightful and pleasurable features of the climate enjoyed by its inhabitants. It is, indeed, rather a semi-tropical than a tropical climate, and is remarkable for its salubrity and health giving properties. These mid-sea islands, fanned by the ocean winds, must not be confounded in the same climate category with such heat-stricken continental points as Calcutta and others which lie in the same parallel of latitude, for Hawaii is not only insular but it is swept by trade winds, and laved by cold oceanic currents flowing southward, which reduce its average temperature some ten or more degree below the point which might be expected from its geographical position alone.

NO EXTREMES OF HEAT AND COLD.

The Hawaiian climate is unrivalled in its equality of temperature and absolute freedom from extremes of heat or cold. The meteorological tables show great uniformity, the mean temperature being about 75° Fahrenheit, and the difference between midsummer and midwinter is seldom more than ten degrees. It is a significant fact, and one which exemplifies the evenness of the climate, that the Hawaiian language contains no equivalent for the word "weather." Light summer clothing is worn all the year round, and the modern houses are constructed with such facilities for ventilation that their owners practically spend their lives in the open air.

HONOLULU PARKS.

By Hon. A. S. Cleghorn.

EMMA SQUARE: This was the first cared-for park in Honolulu. The land being given by Kamehameha IV. at the time Emma Street was opened, both were named after his Consort. It remained unimproved until 1871, when the then Minister of the Interior requested me to take it in charge, my residence being on Emma Street, and I had absolute control of it until soon after the overthrow of the Monarchy. I had it fenced and collected the money from the public for the first band stand in Honolulu, planted it with various shrubs and trees, nearly all of which were cut down after 1895. There was a fine Banyan tree on the Emma Street side, which afforded a pleasant shade, and from my standpoint, what has been done during the last few years, has nearly ruined the Square. Its area is six-tenths of an acre.

THOMAS SQUARE: Named after Admiral Thomas, who restored the flag on that particular spot in 1843. It has an area of six and six-tenth acres. In the early fifties reviews, etc. were held there in commemoration of the restoration of the flag. In the sixties little or no attention was paid to it, and it was soon overgrown with weeds. About 1875 I took charge and had the Square laid out and piped for water, and also had a band stand erected. The Banyans now growing there are from "Ainahau," while most of the other trees are from the Government Nursery. There were crotans planted round the band stand and also in clusters about the grounds. I continued to have charge of that under different Ministers of the Interior until soon after the overthrow, as in the case of Emma Square. There has been considerable judicious trimming done since then, but the removal of the crotans around the band stand was a great mistake.

KAPIOLANI PARK: Named after the Consort of Kalakaua. Nearly all of its area was Crown land which in 1877 was conveyed to three persons, comprising Captain James Makee, Thos. Cummins, Sr., and the writer, the small island in the lagoon being named after Capt. Makee. Kapiolani Park was formally opened on the 11th of June that year with horse races, the land being secured for that purpose as well as a park, and racing was continued until a few years ago, when the sport became so demoralized, that the Park Commissioners had to abolish it, and order the buildings and track enclosure removed. A grievous error was made during the days of the Republic of Hawaii, in disposing of nearly all the Park's waterfront, which cannot now be procured for it, except at enormous expense. The Park is controlled by a Board of Park Commissioners, appointed by the Governor; they have no authority over other parks however. Roads of the Park total 12¾ miles; shrubs and trees number 3,100, there being 50 varieties; the improved grounds comprise about 25 acres, unimproved 115 acres. Kapiolani Park labors under the great disadvantage of being in want of money, the appropriations being barely sufficient to keep the present cultivated part in order, and this only by the aid of private subscriptions and prison labor. There should be a generous vote for some years until the whole

Park is made, and an artesian well sunk, abundance of water being an absolute necessity.

Other Parks: The writer has never been consulted in regard to their location, laying out or management.

CHARLES WARREN STODDARD.

By Arthur Johnstone.

O Brother, thou hast spun our Island lore
    Into bright, golden threads that shall o'errun
    Thy web of life and glitter in the sun
Of future years! On every Island's shore
Thy magic lines shall long be lingered o'er,
    E'en though thy gentle life be lived and done:
    Yes, all the achievements thy deft pen hath won,
As Time speeds shall be pored on more and more
    For their own sweetness, poetry, and truth.
Stoddard! Hawaii remembers thee in death,
    As thou in life didst love her! Here are ruth
And teardrops only—emblems, nature saith—
    Whereby we deck thy grave withal.—forsooth
Crying to thee in vain with plangent breath!

CHARON is always certain of his fare, and, flee men never so warily, death outspeeds them at the end. As I write there lies on my table a time-worn manuscript, penned on the familiar yellow paper in the sprawling hand of one of the cleverest, most lovable men that ever wended the Valley of Tears. Alas! gentle, gifted Stoddard is gone. To those who knew him in the early eighties, ere he last left Hawaii, his death seems almost premature, and certainly it came as a surprise to most of us. Now, this old broken time-stained sheaf of a dozen pages snatched from the dustheap of yesterdays, becomes a relic—nay, let me rather say, a memorial—of the days of the old *Saturday Press* which unfortunately moulders in the dim limbo of Island journalism lived through and out. Ah! what days those were when Charlie Stoddard, Ralph Smith, and I foregathered around the long green editorial table in the upstairs corner of the Campbell Block, where we whiled the time between spasmodic periods of work, by discussing with a temerity beyond circumference this and that, from title-tatle to the knottiest problems of literature and statesmanship. Truly, we were a wayward, at times I fear, a finical staff, even under the directing hand of "The Patriarch," as we surreptitiously but lovingly called our amiable Chief, Mr. Thomas G. Thrum. On the whole we were a happy family, as journalistic families go, and loved one another passing well under an outer habit of decorous indifference.

Of that genial quarto of torch-bearers, Mr. Thrum and I are now left, both somewhat battered perhaps, but with our faces still set seriously against the stars, still doing duty as we see and feel it fallen to our lot; hence it seemed the one proper course to pursue when the editor of the *Annual* suggested that some more fitting appreciation should be written than contained in the casual announcements of Stoddard's death. Thus it comes that I venture to put of record these few thoughts and facts relating to the dead author and his writings about the island world of the Pacific.

Of his personality much might be said most deservingly. Even within the limits of this brief sketch something must be mentioned, because in literary matters an author's personality is the controlling influence which directs his course, be it for better or worse; circumstance and opportunity may do much to shape the selection and final treatment of subjects, but the author's bent in literature, his style, his possession and use of those seemingly illusive qualities of apt selection and exact expression of thought, which, for want of a better term, we call genius, flow directly from his personality and temperament. From the literary point of view these qualities in Stoddard's mental make-up were vigorous and well balanced.

It is true he was a religious man, and here it is often found that men are apt to overestimate the principles which they have been taught, or have adopted in the course of life. It may be added that many are wont to fall into the habit of giving too much deference to the opinions of others similarly acquired; but what must not be lost to sight is that there are always two sides to the allegations of our maturest wisdom, just as there are two view points to our casual thoughts and decisions concerning individual life. In all of his work Stoddard recognized and followed a philosophy and method very like this, and while throughout he was a devout and, I believe, a consistent Catholic, yet happily his religious thoughts and musings did not take the objectionable form often found among religious communicants. On the whole I think we may say that his religious views are unobtrusive in his work, even where they might have been applied directly to the subject in hand; on the other part it will be found that on the subject of religious thought he has always written with restraint, without venting his own opinions or those of his church. Nay, I will go further to say that where he has directly touched on such themes—as in that most pathetic prose-mosaic, "The Lepers of Molokai"—or in fugitive sketch, or essay, will the reader find aught which might not have been written by an agnostic author of equal literary attainment.

Though Stoddard's personality was strong and lovable yet it was retarded by a streak of habitual indolence which, I fear, somewhat curtailed his literary output. However, this foible did not affect the quality of the work he has left us, while on the other hand it has enabled him to prepare for book form a series of pen-pictures in language so nearly perfect and so finely polished that practically they may be said to be faultless in form and matter. This much can be truthfully said of very few authors past or present, and even of the word-conjuring Stevenson I think it may be said a shade less truly than of Stoddard. I know such an opinion will be called rank heresy in some quarters, but it is one that I believe will find standing-room in an unbiased auditory.

In this age there will be found heritics also to the dogma that every author must be compared, sentence for sentence and line for line, with another whose fame and place in letters is fixed. This heresy, if such it may be called, seems to justify itself from many reasonable grounds, but especially from the psychological. In a general way—say on points arising out of the personality of authors—such comparisons may be made in guarded words, but must be carried no further at the critic's peril. Elsewhere I have adventured such a comparison—as far as their personalities permit—of Stoddard and Stevenson*, in the following words in part:

"* * * The islands lying upon steamship routes, or within sailing courses, have been visited frequently by well-known writers of various nationalities; but of these Mr. Charles Warren Stoddard is perhaps the only one of wide reputation who took up residence for a length of time sufficient to make a thorough study of Polynesian life, character, and manners. To those knowing both men—and who in the Pacific does not?—Mr. Stoddard's sojournings and travels, which covered a period of some twenty years shortly preceding Stevenson's time, will be found to fit the requirements of a fair comparison. Although the authors possessed traits in common, Stoddard remains the literary antipode and mental foil of Stevenson. A dreamer, likewise the consummate master of English, he differed from Stevenson in methods of work and in process of thought. Stoddard gathered his facts slowly and after the most painstaking mental scrutiny—often laboriously; yet he never failed to use them solely as a mental product, with which he dealt practically and dispassionately, after excluding personal sympathy and prejudice. * * *"

On analysis I think even this brief excerpt will be found to contain the key-note of Stoddard's literary method, which, while to his credit generally, proved a ready assistance to the acceptance and permanence of his work. There is one point, however, wherein his resemblance to Stevenson was exact, for like the famous Scot he had all for friends and was hail Bohemian wherever cast on the round earth. In this, it may be said, both these clever men differed from most of their contemporaries of note.

We who live in the modern Arcady of Hawaii are by wont surfeited to mental langour until we are fain to pass with unseeing eyes the tropical splendours and scenic beauties which bring strangers to ecstacies among our paradisical retreats. But with Stoddard, how different! From time to time, for nigh a quarter of a century, he was with us; yet familiarity never drew the film of indifference between his imagination and the beauty and poetry of our island life and scenes. To the end he was accustomed—even when in far places and under other influences—to draw for us the most exquisite miniatures on the whitest of ivory, depicting the realities and fancies of life in the Eight Islands, or elsewhere in the South Seas. Whoever opens one of his books relating to the Pacific at once feels the alluring and definitive, yet gossamer-like charm which makes even the casual reader the author's friend. Undoubtedly this influence is largely due to a refined and sensitive personal element which is discoverable everywhere between lines, and most of all in his finished, silken style. When we attempt to define this influence, we fail, and in fact we can but partly discover its factors by analysis of the cleverest kind—and yet we are able to recognise its presence and force everywhere in his pages. This much however readers will be able to fix: that while he has written familiarly of unfamiliar things, he has used ordinary, unpretentious language which the average person may read and appreciate without having two or three foreign dictionaries at elbow; and that while thus writing he has been careful not to aim his shafts over the seventh literary heaven, like some of our modern aspirants for fame, nor like these, has he deafened us continually with Æolus-like blusterings. His writings are in truth soft, lucid and luminous, everywhere diffusing a fresh and distinctive literary aroma which penetrates to the very nerves of the brain.

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* "Recollections of R. L. Stevenson in the Pacific," p. 3, London, 1905.

It may be pointed out here as well as anywhere that Stoddard in his work has repeatedly displayed that rare attribute of all men of genius, namely, the ability to transform the commonplaces of life into literature of the best and noblest. He has performed this difficult feat page after page, throughout sketch, essay, and volume of travel—seemingly without effort, just as if the right word everywhere fell into the right place because there was no other it would possibly fit and express the thought as clearly and exactly. This is a gift that is conceded to be the highest which has fallen to men of genius in all ages, even as it shall be conceded the highest to authors of the remotest future who may hereafter win the world's admiration and applause. Yet Stoddard was no Merope's son who took his flight to listen to the plaudits of men; the fact is that through nature and by temperament he adventured along the literary byways where he might quietly gather the freshest nosegays, unsoiled by the dust and turmoil of the highways of literature. In following this inclination he seems to have unconsciously adopted the philosophy of Horace, which declares that with each dawn a man benefits himself the most by walking hand in hand with his desire; and in Stoddard's case the event proves how the pagan dictum led him directly to the gateway of a simple and beautiful, a sincere and an honorable life. Here I think lies something worth while, something more than the riches and vainglories of men.

Lack of space precludes the customary excerpts from his delightful books, yet I cannot end these too brief notes without some appreciative word of the "arms, and the man" who has created ere his passing such wondrous verbal beauties for our pleasure and instruction. I have spoken of the careful polish given to his writings. Of his habit of revision I can speak with certainty, having the proof at hand. The old manuscript spoken of was handed to me in the *Saturday Press* office twenty-odd years since; it was then entitled "Lahaina, a Memory," but recently it appeared in "The Island of Tranquil Delights," under the Hawaiian title of "The Palaoa." I found the original manuscript seemingly perfect, in fact far above the average of magazine work, it being an apt if somewhat weird sketch of ghostly happenings at the old monarchical capital; but in its present garb I will say that, while its substance is the same, there is not a sentence, scarcely a line, wherein some judicious curtailment, verbal change, or rhetorical addition does not enhance the expression, increase the force, and add, consequently, to the attractiveness of the whole. With the weight of this direct testimony added to frequent internal evidence, I think we may venture to affirm that the rest of his inimitable work has received as painstaking revision before final publication.

His writings relating to the Pacific Islands may be fairly described as of the composit kind, which he constructed by carefully combining the tale, the narrative, and the essay of travel, the three so harmoniously blended as to create the highest artistic effect—an effect that surrounds his work and clings to the reader like some strange tropical perfume. In all of his books about the Islands, Stoddard wrote, not merely as he had viewed, but as he had actually lived the life; even his local habitations and their surroundings have been preserved to us in amber in a dozen places: for instance, the old Bungalow on Liliha street, and his later abode in beautiful Nuuanu Valley, are made to live again in exquisite pages to be found in his last volume of Island sketches. But who does not remember and admire his earlier volume of "South Sea Idyls," wherein not only our island topography but our very life-pulsations are unfolded continually in chaste, classic form? Truly we can say of this book with W. D. Howells, the novelist, that it contains the, "lightest, sweetest, wildest, freshest things that ever were written about the life of that summer sea."

Besides his meritorious prose, Stoddard has left enough occasional poems to fill a single volume. Most of his verse has real merit, but falls somewhat below the high plane of his other writings; and yet his versification taken as a whole is very like that of other clever prose writers who have in no wise surpassed his efforts. Take Sir Thomas Brown, Landor, Lamb, Ruskin, and Stevenson—familiar examples of men whose fame rests on their exquisite prose—who at times were fain to mount Pegasus pen in hand. A casual examination of their work shows that none in their starkest flights succeeded in reaching the heights of Helicon for more than a moment's pause; in truth it may be said of them, as of Stoddard, that in conception and execution their prose is so rhythmic and comprehensive that their efforts under the limitations of verse show the marring effect of the unusual verbal restraints. I remember of once asking Stoddard, why he did not write more verse, and his reply was characteristic of the man. For a moment he stood with folded arms looking at he floor, before he said: "Well, its this way: I really have not the time to waste on poetry." There were two of us present, who, knowing his indolence about beginning work, began laughing, upon which he raised his hand in deprecation, and added: "Now, don't laugh, for I'm serious, and when I say that I've no time for such nonsense, I certainly mean it; the fact is that it takes all the time and care which I have at command to furbish my poor prose into the presentable state where I strive to leave it." Then he concluded, with one of the dry sarcasms we knew so well,—"As to verse, I believe that even you young fellows might write it well, would you but try."

Beyond this I think there is at present nothing further to write of Stoddard's life-work; but of the man himself I will say in conclusion, that I do not remember of ever seeing him in anger, and

I believe in this regard that the most anyone who knew him could testify to would be an occasional but transient state of mild indignation at some froward word or act. At all times and in all places he was kind, gentle, urbane, a warm friend, and a just man alway—such an one as must be sought for in the crowded marts of to-day. But the antithesis is here: that Charles Warren Stoddard lived without soiling his palm with a Judas' penny, and faithfully performed his alloted tasks without envying the greater successes of others; so it happens that, after a worthy, if quiet life, he has been able to bequeath the world a literary heritage of burnished gold. As he had lived without display, so, without ostentation was he buried; and verily may it be said, that he was laid at rest among many less worthy who have been borne to their graves on velvet-covered chariots beneath the blare of boisterous trumpets.

THE COLLEGE OF HAWAII.

John W. Gilmore, M. S. A., President.

As a matter of record it will be well to refer to the steps leading up to the establishment of the College of Hawaii before describing its work and field of service. On May 25th, 1905, there was adopted in the Legislature a concurrent resolution framed by Mr. Wallace R. Farrington, setting forth the importance to the Territory of a college of agriculture and mechanic arts similar to those already established in the states of the mainland. As a result of this resolution the Department of Public Instruction was authorized to make investigations as to the most suitable site and the probable expense to the Territory for such a College. At the regular session of the Legislature in 1907 the report of the commission was presented setting forth the desirability of establishing the College in Honolulu. Following on the report, a commission consisting of Messrs. H. E. Cooper, C. R. Hemenway, and R. S. Hosmer, was appointed by the Governor, and by them two acts were framed, the one an enabling act and the other for appropriations. These were introduced by Senator Coelho and without objection became law, on the 25th day of March, 1907.

A suitable site was chosen and the College began its first work with two regular members in its Faculty in February, 1908. At the present writing the Faculty consists of fourteen members.

The College of Hawaii is one of the Land Grant Colleges of Agriculture and Mechanic Arts of which there is at least one in all states and territories. In some of the states there are two. These Colleges were made possible by an act of Congress passed July 2d, 1862, and signed by President Lincoln. By this act, public lands of the United States were donated to the several states, 30,000 acres for each senator and representative at that time in Congress. This land was to be sold and the income devoted to the "endowment, support and maintenance of at least one college where the leading objects shall be, without excluding other scientific and classical studies, and including military tactics, to teach such branches of learning as are related to agriculture and mechanic arts in such manner as the Legislatures of the states may respectively prescribe, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life."

There is no doubt but that this act is the greatest landmark in the history of education in any country and in any age, for it is the breaking away from the old academic type of education and asserting the rights of the people to an education in terms of their occupations. It also established the principle that an investment by the state for the education of the citizens is one of the best that can be made. With reference to the words of the act it is pertinent to note several things. In the first place, the College is endowed not only for the purpose of teaching agriculture and engineering, but also for the purpose of teaching the science and practical branches that are related to these broad fields of activity. The law intends that those engaged in industrial pursuits shall be able to obtain a knowledge of the practical sciences that bear upon their activities. Farmers' sons should have the chance to become better farmers if they wish, and likewise the children of engineers and industrialists have the chance of becoming better men and women. Intellectual training is emphasized as well as manual training.

Note further that other scientific and classical studies are not to be excluded. A liberal education was planned for. It is not to be argued that the handling of tools and implements and the working with the hands have no value in the education of the young man or woman. It does, but this phase of the student's activities should not be overwrought to the exclusion of a definite amount of scientific and literary culture.

Established, as it is, on broad, liberal foundations, no College is better prepared to do the work that is before it, than the College of Hawaii. We are situated in an environment especially favorable to college work in biological and industrial fields. Our flora and fauna is replete with problems and lessons for the biologist. Our climate has a marked influence on the growth and development of both plants and insects and the variety of studies and investigations in this field of science is a marked feature of our outlook. The equipment in mechanical, electrical, hydraulic and municipal engineering works is not to be surpassed anywhere. Hawaii has the finest and most perfectly equipped sugar factories in the world. In a number of places water is pumped to a higher elevation than anywhere else and the general problems connected with the use and handling of water are very inviting to the student and investigator. In municipal engineering and architecture the islands hold a unique position. Research is an activity of the College of no less importance than instruction and it is the object of the College to promote research in the problems of immediate interest to the community. In the equipment of laboratories and shops, instruments and apparatus will be secured that may be utilized for testing and for measurements in connection with the industrial problems of the community.

With these broad conceptions in mind, the College stands for several ideals in the execution of its work. It holds that all subjects with which men have to do and by which human progress is attained have elements of educational value. It is not very long since it was held that men could be educated only in terms of the classical, literary and theological subjects, that whatever might be attained along industrial lines was merely a matter of skill and handicraft. This, however, is gradually passing away as our own community affords instances of men and women educated in terms of practical affairs of life who are taking their places in the community in respect to its progress and development. The main difficulty that confronts this point of view is the reduction of these practical subjects to pedagogical form in order to give them teaching and training value. When this is done, students may be trained by the subjects of engines, railroads and wheat, as well as by Greek philosophy and mathematics. In the second place, the College wishes to foster the giving of instruction in any subject upon which information may be desired. It is true that agricultural and mechanical activities predominate in our community; at the same time, we are interested in literature and classical subjects, therefore the College stands for more than the mere teaching of those subjects pertaining to agriculture and the mechanic arts.

The College is now offering to young men and women duly prepared, three courses of study leading to the Bachelor's Degree; namely, courses in Agriculture, Engineering and General Science.

COURSE IN AGRICULTURE.

The course in agriculture is designed to give the student information on the essential scientific principles upon which the profession of agriculture is based. The completion of the four years' course does not necessarily imply that the student would be an accomplished agriculturist, for success in agriculture, as in all other professions, comes only with the accumulation of experience and the ripening of the judgment dependent upon practice in accordance with existing conditions. In order to engage intelligently in the production of plants and animals or in the management of the soil, the student must have an understanding of the sciences of biology, mathematics, physics and chemistry, in their relation to the activities of animals, plants and soils.

The student should be broadly educated not only in natural sciences, but also in mathematics, languages, history and economics. It is not enough that graduates of this course shall be agriculturists, or farmers, but they must be trained in the affairs of life, have good judgment and be able to recognize agriculture in its many and important relations with business. The object is to give the student intellectual training and sound judgment and understanding in all phases of the field of agriculture. It is designed therefore that the first two years of the course shall consist of subjects pertaining to general culture in order that the students' professional usefulness may be increased. The work of the last two years comprises for the most part, the study of subjects that pertain to the practice of agriculture. The student has the opportunity of choosing subjects that pertain particularly to the study of crop or animal production or soil management. This course is intended for students purposing to engage in animal breeding, crop production, teaching or research.

COURSES IN ENGINEERING.

The courses in engineering offered by the College are planned to give thorough training in the fundamental principles upon which professional engineering practice is based, and to illustrate the application of these principles by the solution of numerous practical problems. These courses embrace the three main divisions of engineering; mechanical, civil and electrical, the essential features of each being touched upon sufficiently to provide a good foundation for future practice, upon which the student may take up and follow his chosen branch successfully in a professional way as his fund of practical experience accumulates after graduation. The three courses are parallel for the first two years, the mechanical and the electrical continuing the same through the third year, and the course in civil engineering diverges from the other two after the second year, the differences being minimized as far as is consistent with thorough training and the proper administration of the various branches of study. Persons entering these courses are expected to be well grounded in the physical sciences and in mathematics up to, and including solid geometry and plain trigonometry. It is desired to emphasize the necessity of thorough preparation in order that the more serious work of mastering technical subjects may not be hampered by lack of proper ground work.

The general plan provides a broad foundation in English, mathematics, chemistry, and physics, accompanied by drawing and shop work during the first two years. Realizing the value of general culture to the successful engineer, liberal provision has been made for the humanities, including a study of English, history, astronomy and political economy, with a view to their influence upon the student's future professional usefulness. The work of the last two years is more technical and professional in its nature, embracing the study of the principles involved in power development by means of the various prime movers including steam engines, water wheels, gas and gasoline engines, and steam turbines, and also a critical study of the design of such machines, and of the materials entering into their construction as well as practical tests to determine their working efficiency and economy of operation. It is the aim of the department to fit its graduates to assume gradually as practical experience is acquired, those administrative responsibilities which are more and more devolving upon men of technical training, the purpose being to enable the student to become ultimately a skillful practical engineer in any branch. So far as possible, the importance of each subject covered is illustrated by the application to some work which is met with in actual practice. It is intended that the courses offered should be valuable not only from the professional side, but also from an educational viewpoint; therefore, while the student is learning each subject, both theoretically and practically, the training of his mind as well as the needs of the profession are kept in view.

COURSE IN SCIENCE.

The science course is designed to meet the needs of those students desiring a general training in scientific subjects. For the first two years the arrangements of subjects is practically the same as in the agricultural course. Mathematics, the languages, English and German or French, and the sciences; physics, chemistry, botany, zoölogy and geology are taken up. During the junior and senior years in order to give the student sufficient training in some one science to enable him to follow it as a profession and in order to meet a local need not met by the other courses, chemistry is given a prominent place. Enough chemistry is required thoroughly to acquaint the student with the essential branches of the subject. By a liberal number of elective credits, students who wish further to specialize in chemistry; students who wish to supplement their chemical training with other sciences, mathematics, and engineering subjects; and students who wish a more general training in languages and arts are all accommodated.

SPECIAL COURSES.

In addition to the regular courses outlined above the College offers instruction in special subjects. Important among these are the subjects in Domestic Science and Art. There is an increasing appreciation of the fact that much that relates to the home may be studied scientifically not only for the practical value of the knowledge thus gained, but as a means to a liberal education. While the main work offered in these subjects is scientific and technical, the importance of an artistic and literary training for home life is not lost sight of, and ample opportunity is given for the study of subjects of this character by electives and required work in mathematics, languages and the humanities. The courses thus allow opportunity for students to obtain training along both scientific and artistic lines.

Recognizing the place of art training in the broad education now offered by the best institutions, the College has provided for well defined courses in art and design with special reference to ceramics. The aim of the department is to enlarge the resources of its students along both practical and aesthetic lines. The men and women of today who are being trained in the sciences of agriculture and mechanic arts live in close touch with nature. They require that training of the artistic sense that will enable them to appreciate and apply those principles of fitness, harmony and proportion which are manifested in Nature. The refinement of taste and the development of power of discrimination is especially helpful in the home. Special work in mathematics, botany, chemistry, horticulture and many other subects is provided for. The College is also organizing correspondence study in subjects pertaining to agriculture and general science.

For entrance to the courses leading to a degree the student must be at least 16 years of age and must present fifteen credits in subjects generally required for graduation from a good high school or preparatory school (see catalog). Students taking special subjects must be 18 years of age and present satisfactory evidence that they are able to do the work they have chosen.

All laboratories and class rooms are equipped with the necessary apparatus for carrying on the work of the various subjects in an efficient way. Wherever possible the student works out of doors or in establishments of private ownership where the work may be of a practical nature.

The library of the College contains a large and well selected collection of standard works. There are at present about 6,000 volumes and 7,000 pamphlets. Additions will be made as necessity demands. Students in all courses are encouraged and required to make a continued use of the library in connection with their subjects of instruction.

The College is in possession of about 90 acres of land well situated in Manoa valley. About forty acres of this will be included in the campus and the remainder will be devoted to pastures and agricultural purposes. A mountain stream borders one side of the property. This furnishes water for irrigation, power and other purposes. Permanent plantings will be made of all Hawaiian plants as far as the conditions will permit. With all the facilities that this site affords, the College of Hawaii should be able to develop the opportunities in education for the industries that lie before it.

COOKE LIBRARY, PUNAHOU.

By Ernest J. Reece, Librarian.

THE completion of Cooke library in the spring of 1909 was followed by the formal tendering to the Oahu College of one of the most splendid gifts that the history of that institution records. The dedicatory exercises took place on April 22, when little Caroline Cooke, granddaughter of the donors, handed the keys of the new edifice to Mr. Frank W. Damon, who accepted them on behalf of the college trustee. Music was furnished by the school glee club, and after Mr. Damon's response the library was thrown open for general inspection.

The new era in the history of the Oahu College Library dates back about three years, when Mr. and Mrs. C. M. Cooke made known their purpose to enlarge it and provide new quarters. Upon the receipt of gifts made with this in view the purchase of books was started and the construction of the new building begun. A trained librarian was employed and upon his arrival the work of organization was taken up.

The building as completed is in two parts. Its main section, which is 66x58 feet in dimensions, contains a large central corridor, two capacious reading rooms, an office, and a room designed for seminar purposes. In the rear of this section is a two-story stack room 39 feet deep and 35 feet wide. The basement is fitted with unpacking rooms, accommodations for the books and stationery supply store, and a fire-proof concrete vault for preserving college records and other valuable material. The stacking throughout the building is of olive green steel, and the furniture of oak. Gas and electric lights are provided in all but the stack-room and vault, where electricity alone is used. The capacity of the building when all the stacks are installed will be about 50,000 volumes. Mr. and Mrs. Cooke's total gifts for building purposes amount to $44,800, of which a small balance remains after all expenses connected with the completion of the structure have been met.

While the new quarters were being finished organization of the library proceeded. A large part of the $10,000 put at the disposal of the college for the purchase of books has been expended. A thorough catalog is being made and many features of usefulness are being added to the library's activities. Increase of the staff has become necessary, and two more assistants, one trained and one untrained, have been added to the force.

While Cooke library aims first of all to meet the needs of Punahou it is designed to extend its privileges as liberally as possible to the community at large. Its reference room and magazine files are open to all, and use of the material on the circulating shelves is allowed the public as far as this does not interfere with school work. Application for the privileges of the library may be made to the trustees.

HAWAII AT THE SEATTLE EXPOSITION.

By Will J. Cooper.

HAWAII'S part in the Alaska-Yukon-Pacific Exposition, at Seattle, during the summer of 1909, may well be considered one of the most important features of the year. That it was a success in every way is conceded by everyone who had an opportunity of observing the impression it made on the hundreds of thousands of visitors at the big fair. It is the first time that Hawaii has ever taken a really prominent part in a great exposition, and its advertising value to the Territory must be very great—certainly many times what the exhibit cost in dollars and cents.

The assistance and encouragement of the Federal Government is responsible in no small degree for the splendid results attained. The United States Congress appropriated $50,000.00 towards assisting the Territory—half of this amount covering the cost of the building provided, and the remaining $25,000.00 being devoted to securing and installation of exhibits and paying salaries. Besides this, the Hawaiian building occupied one of the most central and desirable locations on the grounds, a very important advantage.

The Hawaiian exhibit cost probably not less than $100,000.00. Besides the $50,000.00 supplied by the Federal Government, the Territorial Legislature appropriated $25,000.00, and a like amount would scarcely cover the cost to individual exhibitors who assisted in no small degree in making the general display attractive.

It must be said that the United States Government really took the initiative in the matter without much consultation with the Territory. After the Congressional appropriation had been made, it was intimated that the Territory should help as much as possible, and the results in this respect leave little to be regretted. Through the recommendation of the Governor, a commission was appointed to have full charge of the collecting, installing, and management of the exhibit. This commission consisted of James F. Morgan, chairman; W. H. Babbitt, A. W. Carter, A. F. Knudsent and J. N. S. Williams. The Dpartment of the Interior, which had charge of the Federal Government's interests, appointed at the suggestion of the Commission, Lloyd Childs, as Special Agent and Disbursing Officer. Mr. Childs had been the representative of the Hawaii Promotion Committee at Los Angeles for several years, and thus was in some degree familiar with things Hawaiian. He had also had experience in previous expositions, which was valuable to him in getting together the vast amount of material which made up the exhibit.

The official representative of the Territory at the Exposition was A. F. Knudsen, Mr. Morgan, the chairman of the commission, not being able to spare the time from his private business.

The Exposition opened on June 1st, and continued until October 16th. Prof. Willis T. Pope, of the College of Hawaii, and Charles E. King, an inspector of the Territorial school department, were sent to Seattle several weeks before the Exposition opened, to assist Commissioner Knudsen and Special Agent

Childs in the work of installation. Mr. Pope's most important work was the placing in position a set of relief maps of the Islands, which he had made. These were set in a great concrete tank about forty feet long in the center of the building, in their true geographical relation to one another, and to scale, and surrounded with water to represent the ocean. This feature was one of the principal attractions of the building. Mr. King superintended the placing of the school exhibit, which was one of the largest and best of similar exhibits at the Exposition.

The Hawaiian exhibit occupied about 25,000 feet of floor space. It was so entirely unlike any other exhibit at the exposition that it formed a distinct novelty to a large percentage of the visitors, and was accordingly very popular. Besides the school exhibit and the geographical exhibit before mentioned, among the most prominent displays were those of the Hawaiian pineapple industry, the sugar industry, fiber, lumber and general fruit industries. During the season over 200,000 persons were served with Hawaiian pineapple in the Hawaii building, by a quintette of Hawaiian girls, who, it is needless to say, attracted much pleasant and favorable attention, and in themselves were no small feature of the exhibit.

Throughout the season an orchestra of native Hawaiian musicians played daily in the building, and proved one of the biggest attractions at the Fair.

A representative of the Hawaii Promotion Committee had direct charge of the publicity work at the Exposition, and a large amount of printed matter concerning the Islands was advantageously distributed.

The first instalment of Japanese laborers, 148 in number, arrived here June 19th, 1868, per British ship *Scioto*.

In 1859 the port of Kawaihae supplied sixty-two vessels with upwards of 5,000 barrels of fine Irish potatoes, besides several cargoes sent to Honolulu. It would gladden the hearts of more than the "small farmer" advocates if that could be said of our potato output today. Our imports for 1909 were 114,630 bushels, valued at $99,550.

HALLEY'S COMET.

By Prof. J. S. Donaghho, College of Hawaii.

DURING the time when the last two Stuarts were making the political life of England exciting, Sir Isaac Newton was maintaining the interest of its scientific life by the results of his struggles with the great problems of astronomy. By the year 1680, he had proved that all the motions of the planets would follow of necessity, if they were attracted toward the sun with a force varying according to a very simple law. He also proved that the path of any body moving under the influence of such an attraction from the sun must be one of three rather simple curves.

Acting upon a thought suggested by the last principle, Edmund Halley, a young friend of Newton's, made a laborious investigation of the paths pursued by twenty-four comets. He found that each of them moved in one of the three curves, so that their motion was explained as simply as that of the planets. Another interesting fact became evident upon careful study of his results: Three brilliant comets, recorded in 1531, 1607 and 1682, had followed substantially the same path, at intervals of about seventy-five years. Delving into the records again, he found that similar comets had been observed in 1456, 1380 and 1305, making six successive comets, appearing at intervals of about seventy-five years, and three of them known to have followed the same path. To Halley the most reasonable view seemed to be that these were not distinct comets, but reappearances of the same one, and he predicted its return in 1758 or 1759.

Halley understood that the motion of the comet would be disturbed by the attraction of the various planets, but he could not compute the amount of the disturbance. Before the predicted time, however, that problem was attacked by Clairaut, and with the assistance of Lalande and Mme. Lepante, he computed that the comet would reach the point of its orbit nearest the sun within a month of April 13, 1759. The observed date was March 12.

The mathematician's pencil has traced the career of the comet backward, as well as forward, and it has been identified with recorded comets as far back as 11 B. C. One of its noteworthy apearances was in 1066, when it was seized upon by William the Conqueror as a good omen for his projected invasion of England, and as a result a representation of it appears in the

Bayeux Tapestry. Another appearance was in 1456, a few years after the fall of Constantinople, and it roused the fears of all Europe. Christians tried to see in it the form of a cross, and Mohammedans claimed that it resembled a Turkish sword.

On its present return, it was first photographed at Heidelberg, September 11. It was then a faint nebulous spot, without a tail. It is nearest the sun, or at perihelion, on April 20, at a distance of about 64,000,000 miles. After that, it approaches the earth for about two months, getting as near as 12,000,000 miles. For a few days, at that time, it is likely to be a very brilliant object in the evening sky.

What seem to have been the most trustworthy computations, that is, made with the most recent and accurate data, fixed the perihelion date at Apri 16. The computers have recently advanced the date to April 20. Let us assume that they have made an error of twenty days, and make a comparison. If a railroad expert were to watch carefully the movements of a train as it left San Francisco over a road with which he was perfectly familiar, and the train passed out of his sight within forty minutes: then, if, basing his calculations upon his knowledge of certain regular changes in the train's speed, and upon his less definite knowledge of some interruptions to its motion, he were to predict its arrival in New York, five days later, within five minutes, he would equal the achievement of the astronomers.

COTTON IN THE HAWAIIAN ISLANDS.

By L. D. Timmons.

SOME years ago I wrote an article on the subject of cotton growing in the Hawaiian Islands, in which a number of technical terms and words were employed. In due course an esteemed citizen approached me and said: "Well, I read your story about cotton." "Indeed?—and what did you think of it?" I inquired. "Fine, fine!" he replied; "I could tell by all those Latin words that you knew what you were talking about." With this suggestion in mind, I will endeavor to omit technical terms, as far as possible, and to make simplicity a feature of this paper. I have decided, also, not to go into the irksome details of cotton culture, feeling that that subject is ably treated from time to time in the bulletins issued by the Department of Agriculture and local experiment station officials.

In beginning the subject of "Cotton in the Hawaiian Islands," I would like to go far back and say that the white man found the "kidney," or Brazilian, cotton in these Islands. Where it came from and when and how it first reached here are questions that have never and probably never will be answered. The probabilities are that the plant came from the South Seas, where it antedates our knowledge of those parts; and found its way, with the Hawaiians in their ancient migrations, to these shores. There is, however, nothing of importance in the questions—the "kidney" cotton being of no commercial value—save that the habits, characteristics (to a large extent) and requirements of "kidney" and commercial cottons are similar, and where conditions are favorable to the one, satisfactory results may be expected of the cotton interesting us most. In other words, the fact that "kidney" cotton finds a natural home in these Islands is a guarantee that commercial cotton will also flourish here.

So much for "kidney"—or what is sometimes called "native"—cotton.

Commercial cotton was first planted in the Hawaiian Islands on anything like a large scale through the efforts of the late Henry M. Whitney, father of the *Hawaiian Gazette* and *Pacific Commercial Advertiser,* and for many years editor of the *Planters' Monthly*. His first experiments were made shortly after the Civil War period, being the result of the high prices of cotton obtaining at that time. The seed used came from Boston to Honolulu, and were supposed to have been obtained from the islands off the coast of South Carolina. At that remote period, cotton was by no means so well understood as now—even in the Southern States; and the experiments of Mr. Whitney were handicapped by lack of knowledge of the plant, as well as the great task of reaching the market with the lint. These experiments were still under way, and were quite promising, when the sugar era dawned in Hawaii, and cotton, potatoes, wheat and other experimental crops retired before the triumphant march of the gilded new-comer.

The next experiments were made by the writer and others nine to twelve years ago. At that time Sea Island and uplands cottons were tried, experimental plots being cultivated on all the islands, at elevations ranging from the sea-level to the plains against the mountains, and under various conditions of soil and moisture. These experiments demonstrated fully that cotton—even with the low prices obtaining at the time—could be made an exceptionally profitable and satisfactory crop in the Hawaiian Islands. Cotton once more had come within a hair's breadth of developing into an established industry—and again sugar (so important and necessary always) proved its undoing. The annexation period came on. New sugar plantations were projected. The wealthier led in the wild scramble for additional cane area, and the middle and smaller investors followed mechanically in the wake of this impulse. A glowing cotton prospect was overshadowed.

There were those, however, who remained true to cotton, and, although handicapped by the overwhelming sugar sentiment (amounting almost to a prejudice against any and everything not produced in the cane field) these men have ransacked the earth for the best of seed and have expended, unstintingly, time and money in experiments. That their theories have been proved by their experiments is amply attested by the cotton plantations on this island today, and will find further and more convincing demonstration in a few months when high-grade, Hawaiian cotton will be upon the market.

The origin and progress of the latest experiments in cotton growing are well known. Foremost and most active in the field work have been E. W. and R. A. Jordan, A. W. Van Valkenberg, A. Frank Cooke, W. L. Howard, E. C. Smith and perhaps a dozen others. In their endeavors they have had the invaluable assistance of Dr. E. V. Wilcox and other experts of the United States experimental station. Genuine Sea Island cotton seed were imported from South Carolina, and the seed is now being raised in sufficient quantities here to supply local demand. The caravonica, a vigorous and prolific species of cotton, which is being successfully grown in Australia, Cuba and South America, was introduced by the Jordans, and is proving highly satisfactory. The caravonica does not, nor can it ever, find the same favor on the market as the Sea Island, but, on account of its remarkably heavy yield, it promises to be second to none as a money-maker. Samples of Hawaiian cotton, of the Sea Island and caravonica varieties, examined by experts in the East during the year, have been classified as superior to the cottons of South Carolina and Australia, respectively.

Last season something like 150 acres were planted to cotton on the different islands of the group, and the indications at this time are that this will be increased to 2,000 or 3,000 acres during the coming year. All of the experimenters are increasing their acreages, and, as they are now going about it in a businesslike way, there should soon be considerable of the local product for sale. In the meanwhile, the subject of a market is receiving proper attention. Naturally—or from force of habit, perhaps—growers are looking first to the mainland. There is no question but that Hawaiian cotton will find ready favor in the mills of New England. The splendid Sea Island variety grown here will, however, meet its kindliest reception in the markets of France and Japan, where it may be used as a blend in the manufacture of delicate fabrics. The caravonica will find ready demand in New England, as well as in Japan, where its length and strength of staple and evenness of fiber will make it highly desirable in the manufacture of high-grade as well as ordinary cotton goods.

The planters of cotton are not confining their attention to either of the varieties mentioned, and quite properly so. Soil, natural moisture and, in some cases, the degree of wind-force in given localities, will make a marked difference; and only by experiments in individual sets of conditions can the desirability of one cotton over another be determined.

A great many questions in regard to the local cultivation of cotton for profit remain unsolved. The cotton plant of the Southern States has a life of a few months only. Here the same cotton is a perennial. It will go on blossoming and fructifying annually, the parent stalk continuing to discharge its duties for years. Either this is unnatural or the cotton fields of America are very far north of their proper zone. It seems certain that in time (and at periods of no great length) the stalks or trees must be renewed, or there will be gradual deterioration of fiber, both as to strength and fineness. How long a stalk or tree may have continuance before such deterioration becomes marked is a matter yet to be determined. The caravonica, being the hardier, would probably have the advantage of the Sea Island cotton at this point.

The questions are frequently asked: "How about pests?" "Will not something follow cotton into Hawaii, to wither and destroy?" Without having consulted experts on this subject, I would give it as my opinion that every active or animate pest known to cotton, except the boll-weevil, is already here. They are kept down, however, by parasites and ants already here and can probably never become the problems they are in some sections of the temperate zone. The Guatamalan ant, which will not thrive in the Southern States, is the natural enemy of the boll-weevil, and could be easily introduced here should the necessity for it ever arise. As the necessity for importing seed from the Southern States no longer exists, the danger of bringing in the boll-weevil is, at most, a doubtful possibility.

RETROSPECT FOR 1909.

HAWAII scores another "banner year" in the blessings with which she has been favored. The same features noted in her favor during 1908 have been as marked this year, so that the period of prosperity has been continuous both for crop productions and, for the most part, of satisfactory market figures. This is but partially shown in our opening article, "Customs Table Review," as, since the fiscal year's closing, the season crop returns are in which show a larger output than ever before.

Weather conditions have been uniform with that of the preceding year; very light winter rains, and the summer showers have been at night, mostly. Some good heavy rains would be beneficial. But one spell of stormy weather occurred and that in January, in which damage befell buildings on windward Kauai, and Oahu, and dealing roughly with the telephone lines of this city.

The year has been strenuous with activities in various lines, not all of them aimed at "the greatest good to the greatest number," but the result it is hoped will prove so in time.

MUNICIPAL GOVERNMENT.

January 4th, 1909, first Monday, at noon, was inaugurated the new municipal government of the city and county of Honolulu, when J. J. Fern, as its first mayor, and the new Board of Supervisors were inducted into office. If any glory is to be found in the change to a municipality its supporters are welcome to all the comfort afforded them in their victory, while its opponents needed no further evidence than the first day's wrangling to rejoice in their non-responsibility therefor, or of the mob of idlers that thronged the vicinity of our "city hall" as if expecting jobs to be thrown out to them upon the new officials assuming office. It was several weeks before the differences between the Democrat Mayor and Republican Supervisors were sufficiently adjusted to enable them to take up public measures.

As yet we fail to see wherein the increased expense and multiplied official machinery to govern Honolulu benefits the city over its administration prior to annexation or even under the county act which followed. The extra cost to taxpayers has been placed at $1,000.00 per month, and the query arises, "What we all get for it that we did not have under county government alone?"

THE LEGISLATURE.

Pursuant to law the legislature convened February 17th and promptly organized for its duties by the election of officers in both houses. Of the Senate members nine were Republicans, four Democrats and two Home Rulers. In the House there were twenty-two Republicans, seven Democrats and one Home Ruler. Hon. W. O. Smith was elected president of the Senate and H. L. Holstein speaker of the House.

The governor's message was lengthy in its presentation of the condition and needs of the Territory with wise suggestions and recommendations for the guidance of members in their deliberations for the public weal. The session began its labors in a conservative spirit and, owing to Federal aid limitations, confined itself to its sixty days, though the time given to considerations for county benefit, and wrestling over appropriations resulted in hasty legislation for much of the rest, laws being made and unmade. The liquor interest showed its hand early in the Senate, and though defeated by the House in the attempt to widen their door of opportunity, they wreaked their vengeance by refusing to confirm the appointment of Treasurer A. J. Campbell, whose conscientiousness to duty affected their interests. Fortunately the experienced members of the House kept control over radicalism, yet, the spirit of superiority so predominated that petitioners were debarred from interviewing members, and important administration changes made without consultation, in some cases, with the department affected. Nor was the Executive in all cases treated with due courtesy. The sigh of relief on their adjournment was general.

A special session to consider the administration measure of proposed amendments to the Organic Act for submission to Congress, more particularly with reference to our land laws, convened November 2nd at the call of the governor, and passing the same practically as presented adjourned on the 6th.

PUBLIC IMPROVEMENTS.

While the public improvements during the year have not embraced projects of heavy expenditure they are important and varied.

Work on the Nuuanu Dam is progressing satisfactorily to the "powers that be," with the prospect of its completion by June, 1910. The patience of Honolulans have the promise of reward in an ample water supply for the growing city's needs, as, in addition to the above extension of the Nuuanu system, steps are taken to augment the artesian supply by sinking two more wells at the Beretania station and instal the high lift pump that has lain idle since its purchase several years ago for want of funds. The construction of a new reservoir at Kaimuki is also part of the extension project, for all of which and to include sewer work the sum of $156,000.00 was appropriated.

Bids for the construction of the Alakea street wharf shed were called for the early part of the year, John Ouderkirk securing the contract. It is a stately and graceful structure, the design of Marston Campbell to meet the special requirements of the large passenger steamship service of the port, at a cost of over $40,000.00. Just as it is receiving the finishing touches as per first plan it is now decided to lengthen it by a 100-foot one-story addition on the seaward end.

The new royal mausoleum, for which $25,000.00 was appropriated, is completed so far as the mason and concrete work is concerned, but the marble finish and its monument will take several weeks yet.

A new detention station hospital has been erected at Kalihi, for which $40,000.00 was appropriated.

Two wire rope landings, machinery for which will be installed by the Honolulu Iron Works Co., is in progress for Honokaa and Kukuihaele, on the Hamakua coast of Hawaii, at an expenditure of some $20,000.00.

The Waimea (Kauai) breakwater has had the attention of the Superintendent of Public Works for its prosecution so far as funds in hand warrants.

Kahului is to have a wharf constructed by the Kahului Railroad Co. of sufficient size to serve the inter-island traffic of the port. This is not to be confused with the larger work and dredging hoped for to serve larger deep sea vessels.

The Hawaiian Dredging Co. contracts to fill in the pond section of the Waikiki military reservation, from dredging of coral, etc., from abreast of the Afong place. For this work $45,000.00 is available.

The Palama Settlement work rejoices now in a new gymnasium, baths and bowling alley, well equipped, which was formally opened October 28th.

College Hills section of Manoa was treated November 1st to an extension of fifty electric lights to the few that had been installed, in response to the petition of its improvement club.

The amalgamation of the Wireless and the Mutual Telephone Companies has been carried through. Extensive changes for its improvement are already entered upon; laying the conduits for putting all wires—including fire and police alarm—underground in the business section; trunk lines in the residence portion, and the erection of a new Central Station on Adam's lane. The estimated outlay for this renovation of the system will entail an expense of some $250,000.00.

RAILROADS.

Kauai now enjoys railway facilities, with Eleele, on Hanapepe bay (now termed Port Allen), as the shipping point, the road extending from Makaweli to Koloa. The Kauai Railway Co., Ltd., is capitalized at $125,000.00, owning land, wharves, breakwater, buildings, boats, cars, over five miles of track and leasing right of way over the 12 miles of the McBryde's railway from Port Allen to Koloa.

The Oahu Railway & Land Co. has extended its roads some ten per cent. during the year by its spurs to Leilehua Waipio and Halemano.

The Pearl Harbor Traction Co. will operate a system between Honolulu and Pearl Harbor Naval Station, connecting with the present Kalihi terminus of the Rapid Transit line.

Hilo Railroad Co. has work well in hand in the extension of its road to Hakalau, a distance of 15 miles, construction gangs working from both ends. Bonds have been authorized for this extension to the amount of $800,000.00. The Kahului extension contemplated last year will not be entered upon at present.

VOLCANO OBSERVATORY.

Agreeable with the suggestion of Dr. W. T. Brigham in his paper on Kilauea in the last ANNUAL, the proposition is made by Prof. Thos. A. Jagger, Jr., a visiting scientist, that the Massachusetts Institute of Technology establish an observatory and laboratory for the study of earthquake and volcanic phenomena at the volcano of Kilauea, as being, without exception, the best location in the world for such scientific study. The project has the promised aid of several of our public spirited citizens

PROGRESS OF THE NEW INDUSTRIES.

Pineapple.—The area under culture of this fruit is still extending. Two new concerns in the Koolau district of Oahu have incorporated this year, viz.: the Kahuku Pineapple Co. and the Hawaiian Cannery Co., each of $50,000.00 capital. Some important changes occur in the earlier concerns, the Hawaiian Pineapple Co. securing the Haiku product and Mr. Jas. B. Castle the controlling interest in the Consolidated Pineapple Co.

Tobacco.—The Kona Tobacco Co., of which Jared G. Smith is the head, was reported in April as having produced fifty bales of leaf tobacco averaging 150 pounds each, ready for shipment, samples of which sent abroad obtained such favorable report as to insure ready sales at highest rates. Like satisfactory reports obtained of the output later of the Hawaiian Tobacco Co., five tons of three grades, which sold by sample at from $1.90 to $2.10 per pound. Hamakua growers are confident of their prospects in this line and steps are taken toward testing tobacco culture in the Hilo district also.

Rubber.—Expert report upon samples of island grown rubber received through the Experiment Station place it practically equal to that of Ceylon, of a market value, in New York, of $1.25 per pound net. A similar report on six samples sent to Hamburg a few months later ranged from 79 cents to $1.31 per pound, at which ready sales could be assured. Probably the tapping of our rubber trees on a commercial scale will not begin till in 1911.

Cotton.—Another year but strengthens the belief in the desirability of cotton as a product for culture in many parts of the islands. From the favorable testings reported in our last issue, the Kunia Development Co., on this island, have closed their option on a large tract and are extending their plantings. The experimental fields on Kauai are widening and Molokai is waking again to its possibilities in this direction.

Canned Bananas.—Satisfactory results have been reached in experimenting with the canning of bananas at the Lawai Cannery, Kauai, so far as retaining the natural flavor of the fruit. It remains now to test it on a commercial basis.

IMMIGRATION MATTERS.

The establishment of an agency of immigration in New York under J. D. Trenor, noted in the last ANNUAL, fell far short of benefits expected, so his services have been dispensed with. An effort to secure the return of Portuguese on the Pacific Coast was also unsatisfactory and had to be discontinued. Porto Rican recruiting was resumed in February and a number of desirable laborers have been secured. Messrs. L. E. Pinkham and A. O. Steven were assigned to the Philippines as agents for the selection of laborers, and the several hundred sent hither, so far, give promise of much satisfaction. June 1st Mr. A. J. Campbell was sent to the Azores and Portugal, as agent of the Board, to direct immigration from that source. One vessel with about 800 souls is en route as a result.

October 21st the first lot of Russian immigrants from Harbin, comprising 50 families, arrived in charge of A. L. C. Atkinson, special agent of the Board, and A. W. Perelstrous, through whom this source of labor was inaugurated. And so satisfactory and contented are they in their new sphere that further effort is being made for others desirous of moving hither

FLORAL PARADE.

The annual floral parade February 22nd, was carried out with much spirit again this year, the decorated automobiles being more numerous and embracing many original and tasty designs. The pa-u riding cavalcade was fairly eclipsed and the cow-boy feature was omitted. An attempt was made to add a street carnival feature in the evening, though why any one should seek to encourage the rude street license and senseless noise, which is its only excuse for being, is hard to conceive.

LINCOLN'S BIRTHDAY.

In common with the spirit throughout the country the observance of Lincoln's 100th birthday was generally observed by special services, the main events of the day being the military parade, open air musical exercises of the school children, and literary exercises at the Opera House.

REAL ESTATE.

Activity in real estate during the year has been marked, and at improved rates for desirable properties. This was a noticeable feature in the government sale of its remaining Alewa Heights lots early in the year which sold at figures averaging twice above their upset prices. The sale of Pupukea lots, agricultural tracts, also exceeded upset figures. Suburban residence lots have had preference among buyers, notably in the College Hills and Kaimuki tracts. Several desirable beach lots beyond Diamond Head put on the market this summer found ready buyers. Of business properties several important transfers have occurred, the latest being those of the late W. C. Peacock, to close the estate.

Referring to the Record Office the preponderance of deeds for the fiscal year ending June 30, 1909, is very marked and the character of all transfers lead to the belief that many new homes have been erected. Loans on residential properties have apparently been more easily secured and at more favorable rates of interest than have ruled hitherto, with the outlook of lower rates the coming year.

The transfers recorded for the year comparative with preceding years shows as follows:

	1907	1908	1909
Deeds	1517	1549	1733
Mortgages	461	449	595
Leases	338	339	353
Bills of Sale	117	112	144
Attachments	3	1	1
Miscellaneous	889	1137	971
Total	3325	3587	3797

BUILDING ACTIVITY.

The feeling above noted in real estate naturally affects building movements, hence we are prepared to note the increase in the number of new structures and alteration or repair of others. Up to July it was reported that the building activity was 40 per cent. over that of 1908, and with the increase was noted the superior type of structures. Among the more notable may be mentioned the completing of the Yokohama Specie Bank, the erection of the new Empire Theater, corner of Bethel and Hotel; the Central building, King street near Fort; the alteration and enlargement of what was the Makee block; the Children's Hospital on Kuakini street near Nuuanu; the Rescue Home, and progress on the Mid-Pacific Institute, in Manoa; the new Sisters' Convent, at Kaimuki, as also several of the many new residences that are quite pronounced, in size and type.

Hilo has had erected this year its first theater, of a seating capacity of 700 built for the moving picture business, but provided also with dramatic service. A Masonic Temple of steel and reinforced concrete, costing in the neighborhood of $90,000, is also completing this year and a two-story structure is in progress for Hackfeld & Co., to cost $50,000.00. The hotel has changed hands and is to be improved. The Volcano House is to be enlarged in addition to the new cottage built this past summer, named "Congress Hall," in honor of the visiting Congressional party. Altogether Hilo is showing new life.

Maui is proud in the possession of a fine hospital, erected at Paia by the Maui Agricultural Co. for its employes, costing about $15,000.00. It is of wood, 149x108 feet with 9 feet verandas on all four sides. The fine new Paia school house has been completed this year.

OLD BUILDINGS DISAPPEARING.

Besides the demolition of the old Canton Hotel building (as given elsewhere) is noted the disappearance of St. Andrew's Pro-Cathedral, which was sold and torn down last September, to give place to improvements and extension plans in progress. The building was erected in 1866.

The Eagle Hotel on Nuuanu street near the first bridge, erected in 1872 as a gymnasium for the Olympic Club, has been taken down and rebuilt for the use of the Hawaiian Dredging Co.'s force at Pearl City.

The Moehonua house, later the Gibson residence, adjoining the Opera House, has been demolished and the premises cleared.

OFFICIAL CHANGES.

Among the many official changes during the year may be mentioned the following:

Hon. Geo. W. Woodruff comes from Washington, D. C., to assume the office of Second Federal Judge.

S. B. Kingsbury becomes Judge of the Second Circuit vice A. N. Kepoikai, resigned; and Geo. A. Davis succeeds Judge Kingsbury as U. S. Commissioner.

Hon. Alex. Lindsay resigned as Second Judge of First Circuit and was succeeded by Wm. L. Whitney.

Associate Justice S. M. Ballou resigning has been succeeded by Antonio Perry.

Secretary E. A. Mott-Smith assumes the additional duty of President of the Board of Health, vice M. P. Robinson, resigned.

Dr. W. C. Hobdy returned in May to take charge of the Federal Health Service, vice Dr. L. E. Cofer promoted and transferred to Washington, D. C.

Richard Ivers resumes superintendency of Territorial Board of Immigration, vice E. A. Mott-Smith, resigned; Wm. Savidge is appointed assistant secretary.

David L. Conkling is appointed Treasurer vice A. J. Campbell, resigned.

L. A. Andrews returning to the islands succeeds W. L. Whitney as Deputy Attorney General.

Wade Warren Thayer succeeds Carlos Long as Second District Magistrate for Honolulu.

Daniel Case is appointed County Attorney of Maui vice J. L. Coke, resigned, and Wm. H. Beers to the County Attorneyship of Hawaii, vice Chas. Williams, deceased.

The Public Lands Office becoming a bureau of the Public Works Department retires Commissioner J. W. Pratt, and changes under the law in the Department of Public Instruction reduces its Traveling Inspectors.

BUSINESS CHANGES.

Jas. F. Morgan relinquishes the regular sales feature of his auction business to devote more attention to stocks, bonds and real estate. His room sales business falls to the City Auction Co., of which J. W. Smithies is manager, and J. W. Pratt auctioneer.

E. Herrick Brown & Co. changes to Brown & Lyon Co., moving to the Hawaiian News Co.'s store and amalgamating with its book department.

A. R. Gurrey Jr. & Co. dispose of their interests in the Hawaiian Photo Supply store to Norton Bobo, who changes its name to "Ye Art and Craft Shop." Mr. Gurrey opens a new photo and art store on Fort near corner of Hotel as Gurrey's Ltd.

The Japanese Bank, a new concern, opened for business, corner of Hotel and Smith streets, a co-partnership, under date of June 15, 1909.

The most important business change in years in these islands is the amalgamation of the corporations of Brewer & Co. and W. G. Irwin & Co. reported in progress, details of which are not made public further than Brewer & Co. will increase its capital stock to exchange for that of the Irwin corporation, assume its various agencies and move to its quarters on Fort street.

John Nott, retiring from the hardware feature of his long established business, moves to the Magoon building on Merchant street.

The sample room and agency department of The Waterhouse Co. has moved from the Young building to their own premises, No. 10 Queen street.

Theo. H. Davies & Co., Ltd., succeed by purchase to the family grocery business of Lewis & Co., Ltd., in the Lewers & Cooke building, King street.

LAND COURT CHANGE.

Hawaii's Land Court, after an existence of six years, becomes a thing of the past. Under a new system born of economy its duties devolve upon the Circuit Court, Judge Robinson, the Third Judge of the First Circuit, being assigned to its cares.

STOCKS AND BONDS.

At the annual meeting of the Honolulu Stock and Bond Exchange, held August 20th, figures showing a year of remarkable activity were presented.

Sugar stock transactions alone during the year aggregated	$5,033,790
Total bond sales recorded for the year was	1,094,502
Miscellaneous stock transactions for the year amounted to	360,421
Total	$6,488,713

NOTABLE VISITORS.

The islands have been favored this year with a larger number than usual of distinguished visitors, some on duty, some on pleasure; some for a brief stay, others en passant, most of whom expressed their charm of the "Paradise of the Pacific." Apart from the visit of the Congressional party of 40 (of whom 15 were ladies), which was educational by invitation, and the U. S. Pacific fleet under Rear-Admiral Sebree, on a practice cruise, the following, out of many, are recalled at this writing:

Dr. Thos. C. Chamberlain of the University of Chicago and president of the American Society for the Advancement of Science, en route for the Orient, made the most of his time during a short stay.

General Managers Bancroft of the Southern Pacific and Calvin of the Union Pacific railroads visited the islands early in the year, noting their progress and beauty which they admitted was "a revelation" to them.

The Chapman-Alexander Evangelistic party of eight arrived from Victoria April 2nd for a short season of religious work en route to the colonies.

Rev. C. F. Dole, of Boston, spent several profitable weeks during summer.

Hon. Chas. W. Fairbanks, ex vice-president, and wife and daughter, made a stay-over visit by invitation en route to the Orient and had a strenuous but enjoyable tour of the group.

Paul de Longpre, the noted artist, with his wife and daughter visited in May and spent several weeks in thorough enjoyment of the islands' charms.

John Burrows, the famed naturalist, also spent a few weeks in summer taking notes on Hawaiian plant life.

Father Urbain Faurie, a botanist of note, arrives to devote months of study to the flora of Hawaii, more particularly its mosses, ferns and lichens, of which the islands possess a rich field.

Dr. Thos. E. Green, noted lecturer, through an accident, made a forced stay of a few weeks, which was turned to mutual profit and delight.

Senator Dillingham, chairman Immigration Commission, and Wm. R. Wheeler visited the islands to investigate labor condition of Japanese and others.

Prof. Thos. A. Jagger, Jr., of Boston, and later Dr. Tempest Anderson, of York, England, visited the islands for special study of the volcanic phenomena of Kilauea.

R. P. Schwerin, general manager Pacific Mail Steamship Co., and wife, and Mr. and Mrs. M. H. De Young paid us a short visit of recreation.

The Chamber of Commerce was delighted to honor a party of 40 representatives of Chambers of Commerce of England and Canada, from Vancouver en route to the colonies during their stay in port by courteous attention.

M. O. Leighton, division chief of Geographic Survey, and W. C. Mendenhall, head of Division of Ground Waters, arrived for the water survey work of the islands; and R. B. Marshall, chief Geographer U. S. Geological Survey, comes for island service.

Brig. Gen. John J. Pershing, U. S. A., refreshed pleasant memories en route to Manila.

Japanese Princes Fushima and Kuni, as also Soncho Otani, vice-head of the Hongwanji Buddhists, made calls in passing through.

Dr. Victor S. Clark, special agent in charge of the coming census work of the Territory of Hawaii, arrives to enter upon the work.

NAVAL VISITORS.

The larger number of naval vessels has been a feature of the year and of more nationalities than usual, embrace the following: U. S. S. Buffalo, St. Louis, Tennessee, West Virginia, Maryland, California, South Dakota, Colorado, Washington and Pennsylvania; H. B. M. S. Cambria, Flora and Bedford; H. I. J. M. S. Aso, Suya and Idzumo; Holland cruiser Noordbrabrant; German cruiser Arcona, and Italian cruiser Calabria.

SHIPPING CASUALTIES.

The inter-island marine mishaps have been fortunately few in this past year, but not so with those in our deep sea service. No tidings have been received of the ship Fort George, which left New York July 26, 1908, for Honolulu with 2,500 tons general merchandise. She is supposed to have been lost in the vicinity of Cape Horn, a four-masted vessel, resembling her, being reported ashore the latter part of the year near the Straits of Le Maire, with no signs of life visible.

Schooner Flaurence Ward, January 16th, brought to port three Japanese, rescued from the Pearl and Hermes Reef, left there July 7th, 1908, by a Japanese schooner with but a month's supply of food. The vessel is supposed to have been lost in a storm which occurred shortly after.

Ship Dirigo, Goodwin, from Baltimore, October 26, 1908, for this port, with coal, met successive gales and thunder storms causing her to spring a leak and doing damage necessitating putting into Rio for repairs. Resuming voyage January 26th she arrived here May 15th.

Schooner Prosper, which left Hilo in June with a cargo of railroad ties for Redondo, sprung a leak and came to this port for repairs. Left again on her voyage, but had to put back for further attention, then went on her way.

Bark Kaiulani, Colby, coal laden from Newcastle for this port, put into Auckland June 11th for repairs, having met with heavy gales causing loss of sails, rudder and other damage. Part of cargo was jettisoned; a jury rudder contrived and headed for nearest port, reaching Auckland after 17 days, where repairs were effected and the voyage resumed.

Transport Logan, arriving at this port after dusk March 13th, grounded near the quarantine wharf and resisted all effort at dislodgement by tugs and other aid till midnight of 16-17, when she was pulled off, with no injury apparent.

Schooner Rainbow capsized in a heavy squall off Molokai and sunk, July 4th, with a number of women and children aboard. One life lost.

Schooner Ada left Paauhau, Hawaii, July 16th, presumably for Honolulu, with 40 tons of scrap iron on board, and has not been heard of since. With the captain she had a crew of five men.

Steamer Niihau ran on the Kamalo reef August 16th, through mistaking the light, but slid back after 24 hours detention and reached this port without aid, leaking but little.

Mission schooner Hiram Bingham was capsized in a squall off the Caroline Group May 4th. Its captain, Rev. A. C. Walkup, and the native crew of four took to the boat and after three weeks of exposure and hunger reached Ebon only in time for Captain Walkup to succumb from the strain and privations.

Norwegian steamer Ocean Queen, which left this port August 25th, was lost on Makatoa reef October 6th shortly after leaving Tahiti. She had a large amount of supplies and contributions for the Nauru Mission, all of which was a total loss with the vessel. All hands were saved.

September 27th, three fishermen were capsized off Barber's Point, some four miles from shore. One, a Samoan, swam in for aid, leaving two Porto Ricans clinging to the boat. Landing at Keaha Point he reached the dredging camp. One steam launch went out in search, but returned unsuccessful, and again others, as also the light-house tender Kukui, but no sign of the men or the upturned boat was found.

November 13th, the day after leaving Hamburg for this port, the German bark Marie Hackfeld, 1705 tons, was lost on the German coast, as also her cargo of general merchandise, fertilizer and cement. Officers and crew all safe. Vessel and cargo fully insured.

LIGHT HOUSES.

The following light houses have been established during the year, viz: Kailua (Hawaii) Light Station, located on Kukailimoku Point, established Sept. 1, 1909. This is a fixed red lens-lantern light, about 60 feet above the water and 40 feet above the ground, shown from a lead-colored mast.

Kalawao, Molokai, on northerly part of the peninsula of Makanalua; a second order light, flashing white every 20 seconds, was established Sept. 2nd. The light is 213 feet above the water and 120 feet from ground, shown from an octagonal concrete structure.

Makapuu Point (Oahu) Light Station, located on southeasterly point, was established Oct. 1st; a hyper-radiant light, flashing white 7½ seconds, about 420 feet above high water and 25 feet above the ground, on a cylindrical tower of 20 feet diameter at base, surmounted by a hyper-radiant lantern with vertical posts and horizontal sash bars, painted black.

SMART PASSAGES.

Bark Foohng Suey arrived in Honolulu March 15th after a fine passage of 114 days from New York.

Barkentine Thos. P. Emigh left Honolulu in ballast March 10th, and arrived off Cape Flattery March 17th, reaching Port Townsend in a little less than eight days from this port.

Sebree's fleet of eight armored cruisers made the record trip from San Francisco in 4 days, 17 hours, arriving at Honolulu before noon of Sept. 10th, 1909.

PLACES OF AMUSEMENT.

An evidence of popular interest taken in moving picture entertainments is seen in the number of theaters for their exhibit this past year, there being at one time no less than eleven. The principal new concerns establishing being the Empire, Park Theater, Aloha Park, The Bonine and the Princess Skating Rink. The Auditorium annex to the Art Theater is in frame, but making slow progress. The new Empire Theater is a one-story structure of reinforced concrete, at corner of Bethel and Hotel, was completed in May, and with its appointments represents an outlay of $25,000.

NUUANU BATTLE TABLET.

A marble tablet commemorative of the battle of Nuuanu, set in a nich cut in the rock face of the Pali, was unveiled with appropriate ceremonies June 28th, 1909, by Mrs. E. K. Pratt on behalf of the Daughters of Hawaii, on which was inscribed the following:

"Erected by the Daughters of Hawaii, 1909, to commemorate the Battle of Nuuanu, fought in this valley, 1795, when the invading conqueror, Kamehameha I, drove the forces of Kalanikupule, King of Oahu, to the pali and hurled them over the precipice, thus estabishing the Kamehameha dynasty."

FIRES.

The past year, up to the date of this writing, has been remarkably free from fires. This would seem providential considering the way our frame Chinatown has grown, and the hazardous nature of the rows of wooden buildings that are to be found in Honolulu, in Hilo, and in all our smaller towns, any of which may at any time be the cause of serious conflagration.

The losses up to date will probably not exceed $10,000, from the twelve fires that have occurred; $3,000 being on Hawaii, $403 on Maui, and the balance on Oahu.

VOLCANIC.

Volcanic activity in Kilauea through 1909 has been continuous. October 10th, by survey, the fire lake was found to be 155 feet below the rest house, while the inner wall immediately surrounding the flowing lava reached a height of about 20 feet. The area of the active pit was fully seven acres and the roar of the waves could be distinctly heard at the volcano house, three miles distant. A few weeks later its glare was observed from Hilo and distant Kohala. The summit crater of Mokuaweoweo has also shown signs of activity recently, observable from the southern coast of the island, but no parties as yet have visited it.

INNOVATIONS.

Malihini Xmas Tree.—Christmas Day of 1908 was lively in Bishop's Square, opposite the Young Hotel, at the provision made for the waifs of the city by the distribution of some 1,400 gifts to supplement the usual remembrance of the season by the various churches and Salvation Army. The malihinis' tree was a pleasing incident, the inspiration of Mr. and Mrs. Jackson and Mr. and Mrs. J. J. Bryan, assisted by several other visiting tourists, who took advantage of the occasion to show their appreciation of Hawaii.

Tag Day.—An innovation in the cause of charity occurred Saturday, Feb. 5th, designated as "Tag Day," when 325 girls possessed the town and tagged everybody that came in sight "to save the babies," whereby $3,243.23 was secured for the pure milk depot of J. A. Rath's Palama Settlement work.

Honolulu United.—The promoters of the movement for a new Y. M. C. A. building of a size and efficiency equal to Honolulu's needs, made their plans for a $100,000 canvassing campaign under the slogan of "Honolulu United." The interest of the community was drawn thereto by press, pulpit and banquet, and a limited ten days' work of solicitation entered upon October 12th, but so efficient were the canvassers and so generous the response of subscriptions that the campaign closed on the 18th with $137,737 in sight, which, with the C. M. Cooke gift of $50,000 toward this object some months before placed the Association in a position to do better than had been planned.

CHILDREN'S HOSPITAL.

The Kauikeolani Children's Hospital, situate on Kuakini street, has been erected and completed this year and was formally opened Thanksgiving Day, 1909. The building is specially designed for the tropics and its special uses; the rooms being bright and cheery, with thorough ventilation throughout.

On the first floor is the office and receiving room, three free wards, bath rooms, linen closets, a dining room and large kitchen, with broad veranda, back and front. The pay wards are on the second floor, as is also the operating room, well equipped with the most approved modern fixtures and appliances, a surgical dressing room with another adjoining. In the basement are the laundries, sanitarily equipped.

Adjoining the main building is one for the nurses and on the grounds others for servant quarters and for a contagious ward. All this provision for the unfortunate little ones was made possible through the initiatory generous gift of Mr. A. S. Wilcox for the movement. The cost of the land and buildings have been $46,966, and the institution starts with an endowment fund of some $65,000.

IMPROVED STOCK.

By the British steamship Ruthven there arrived from New Zealand, in January last, 13 short and four Hereford bulls, and 105 specially picked merino sheep, for the improvement of stock on these islands, to which special attention has of late been devoted. In February the Parker Ranch also received from Seattle per S. S. Missourian 13 bulls and 11 heifers, all of the highest pedigree, from North Yakima, Wash.

ALGAROBA BEAN MILL.

An invention of much value to these islands has been brought to perfection this year in the algaroba bean macerating mill of C. W. Renear, whereby the hitherto almost waste product, known to be a high grade stock fattening food if it could be milled, will hereafter have the effect of giving a commercial value to the many thousand tons of beans on this island alone, and the utilizing of this home product will modify our yearly hay and grain import bills. Mr. D. P. R. Isenberg, who long since recognized the food value of the algaroba bean for stock, has aided and encouraged the inventor to a successful issue, and becomes the possessor of the first marketed practical mill.

WEATHER BUREAU KIOSK.

A Weather Bureau Kiosk was installed November 19, 1909, by Wm. H. Stockman, Section Director, at the corner of Hotel and Bishop streets, a cast iron four-sided structure about four feet square and seven feet high. Its recessed space each side is 30 inches wide, 35 inches high and five inches deep. The northern face displays the self-registering instruments, and the others contain maps, charts, etc. The instruments furnished therewith are:

Hygrometer, Thermometer, Maximum and Minimum Thermometer, Rain Gauge and Thermograph.

NECROLOGY RECORD.

Again is the year's list crowded of those long identified with the islands, or its people, that have been called to their final reward, among whom we note the following, since the last ANNUAL:

Mrs. J. O. Carter, H. N. Landford on Maui (79), Mrs. M. J. Forbes (76), Robt. Rycroft (66), Jos. O. Carter (73), Rev. E. G. Beckwith on Maui (83), Geo. Stratemeyer (54), W. C. Peacock (50), Thos. Lindsay (69), Rev. S. E. Bishop (83), H. R. Macfarlane (64), Miss A. M. Felker (50), Mrs. N. S. Sachs, Mrs. J. A. Hassinger (65), Mrs. W. R. Brinckerhoff, Jos. Marsden in Berkeley (59), Father Clement (77), C. R. Blacow in Kona, C. M. Cooke (60), Mrs. von Tempsky on Maui, Mrs. John Nott (74), Wm. T. Paty, Mother Superior Judith (75), Gorham D. Gilman at Newton, Mass. (88), Miss L. B. Brickwood (58), Captains Chas. Potter in Alameda (78) and E. R. Underwood at sea (54), W. G. Walker at Ookala, Mrs. Chas. K. Stillman at Kohala, Wm. Johnson in Kona, Mrs. Anna Perry.

HAWAII AND ITS VOLCANOES.

A Summary Review by Prof. Edgar Wood.

THE object of this book is to describe correctly the phenomena connected with the discharges of molten lava from the two great Hawaiian volcanoes—Kilauea and Mauna Loa.

It is presumed that all the Hawaiian volcanoes throughout the archipelago have been developed in a similar manner—starting at bottom of the ocean there has been an outpouring of lava, gradually accumulating upwards. If the supply was inadequate these cones lost their vitality before reaching the surface of the water. In other cases the summits became the low coralline islands composed of the reefs aggregated by the labors of the industrious

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Hawaii and Its Volcanoes, by Charles H. Hitchcock, LL.D., of Dartmouth College; large 8 vo. cloth, ill. 314 pp. Hawaiian Gazette Co., publishers, Honolulu.

polypi. To illustrate these phases of development, Part I describes the Physiography of the Archipelago, alluding both to the original growth and the later imperfect stocking of the islands with plants and animals.

The high islands have been built up above the sea-level by the subaerial accumulation of basalt. When the igneous action ceased, the lengths of the subsequent periods are measured by the amount of erosion effected. If the time has been long, the canyons excavated by the running streams will be numerous and deep: or if brief, the erosion produced has been correspondingly slight. Hence it is possible to speak of the "Old" and the "New" topography.

These islands are partly those termed low and those called high. The first may be swept by the ocean waves in times of storms or may be simply reefs or shoals. Their origin may have been the same as that of the high islands which are supposed to have been igneous protusions from the bottom of the ocean. The low islands may be capped by coral growth which commenced existence after the igneous eruptions had ceased. This archipelago may be conveniently divided into first the low islands and shoals, secondly the high islands below 1,000 feet in altitude above the sea level, and third those that exceed 1,000 feet above the sea with their satellites.

The depth of the ocean adjacent is put from 16,000 to 18,000 feet as determined by soundings. Adding to these figures the elevations of the highest volcanoes on Hawaii, we have the evidence of the existence of volcanoes 30,000 feet high. If arranged on a line, the islands of this archipelago represent a row of conical peaks from 18,000 to 30,000 feet.

These cones must be very blunt, with a base of say two degrees upon each side, or four degrees for 16,000 feet altitude, which would represent an incline of about one hundred and fifteen feet to the mile. This corresponds with the existing visible slope of Mauna Loa. This slope is so gradual that one can hardly realize that the mountain is nearly 14,000 feet high, when viewed from a distance of thirty miles; and the suggestion that the steep needles or islands might be overturned by earthquakes is surely unfounded. These islands are not arranged upon a single line, and the soundings prove that other cones are scattered indiscriminately about the archipelago which do not reach the surface of the water. The submarine area adjacent to these islands must be very extensive, so much so as to suggest the existence of Tertiary strata through which the volcanoes have eaten their way.

The pelagic deposits between the islands are chiefly red clay, volcanic mud and globigerina ooze. The first is the most extensive, being a smooth, sticky mud, from light yellowish brown to dark chocolate in color, and composed of clay, calcareous and siliceous organism, mineral fragments of volcanic origin, and various products of local chemical formation, as nodules of manganese peroxide, crystals of phillipsite and particles of palagonite. The teeth of sharks and fish were not found in this section. The least depth at which the red clay was found was 2,010 fathoms. This material is supposed to have been derived largely from the pumice blown out from volcanoes and carried over all the oceans by currents. When thoroughly soaked it sinks and changes its color.

The volcanic mud consists of pumice, glass, ashes and the debris of volcanic rocks, more or less mixed with organisms at great depths. It has been derived from the volcanic masses of the several islands adjacent, and thus passes into the terrigenous deposits. The most abundant constituent is the glass, occurring as threads, masses from which the fibres were drawn out and angular transparent fragments. Red palagomite is more common in this than in any other pelagic deposit.

The globigerina ooze contains over 30 per cent. of calcium carbonate in the form of minute shells of foraminifera, of which the most common is that from which the name is given. The animals swarm in the waters above 2,200 fathoms and the dead shells accumulate at the bottom of the sea. When this ooze is brought to the surface and is solidified, it becomes chalk.

Descriptions of the low islands illustrative of the foregoing characteristics are given, comprising the Ocean Islands, Midway Island, Laysan, Gardiner Island, French Frigate Shoal, Maro Reef, Necker and Nihoa or Bird Islands.

THE HIGH INHABITED ISLANDS.

Each one of the high inhabited islands from Kauai to Hawaii is fully described, using for a basis the beautiful relief map of Professor Pope. The description of Oahu is particularly full, following the sketch published in the bulletin of the Geological Society and summarized for the ANNUAL a few years ago by Dr. S. E. Bishop. The physical features of these islands have been more carefully studied than any of the others.

MAUNA LOA.

The first ascent of Mauna Loa was made by Archibald Menzies, the botanist of Vancouver's company, in 1794. His manuscript is published in full for the first time.

We found the summit of the mountain nearly flat for several miles, strewed over with huge lumps of loose lava, and here and there deep snow. About 11 in the forenoon we arrived at the mouth of an immense crater at least three miles in circumference, and looking round us we conceived the western edge of it to be the highest part of the mountain. I was therefore desirous of making that the place of observation with the barometer, but being on the south side of the crater, to get to this eminence we had to cross over a large hollow full of hideous chinks and chasms in all directions, and strewed over with large masses of broken and peeked lava in irregular piles, exhibiting the most rugged and disruptive appearance that can possibly be conceived. The true altitude corrected from Menzies' figures is 13,564 feet. The sides of the crater (which were judged to be about a mile in diameter), were quite perpendicular and, as we conjectured, about 400 yards in height, all around, excepting opposite the hollow already mentioned, where the height was much less: the bottom of its was quite flat, being filled up with lava with a wavy roughness on its surface, apparently in the state in which it cooled in this immense furnace. At the edge of it we observed smoke in two or three places which we conceived to issue from hot springs, as on our way back to the party we visited the entrance to a cavern out of which there issued a very hot stream.

THE WILKES PARTY.

The most elaborate attempt to take observations upon Mauna Loa was that of the United States exploring expedition in 1840-41. Captain Wilkes, the officer in command of the expedition, wished to apply the best apparatus of his time for the determination of geodetic positions and altitudes besides observing the volcanic phenomena and mapping the country. His ship anchored at Hilo. The party started December 14, 1840, and the last of them returned to Hilo, January 23, 1841, making an absence of forty-two days. Twenty-eight days were spent upon Mauna Loa; six days were required to make the ascent and two for the descent to Kilauea. At the beginning the company was to be compared to a caravan. The natives moved under the direction of Dr. G. P. Judd, without whose help the expedition would have been a failure.

ERUPTIONS OF 1855, 1859 AND 1868.

The outbreak of 1855 commenced August 11th and continued for sixteen months. The amount of lava ejected was the greatest of any of the flows seen by modern observers. The only witnesses of the scene on record were Titus Coan, S. E. Bishop and F. A. Weld. It started from a point 12,000 feet high and nearer the summit than the preceding flow. The first thing seen was a small point of light much like Sirius; it threw off coruscations of light and soon resembled a full orbed sun. As the stream continued to flow directly towards Hilo, the inhabitants grew more and more anxious and made frequent trips to determine its progress. Mr. Coan visited this flow eight times during its history.

The eruption of 1859 started at an elevation of 10,500 feet on the north side of Mauna Loa and was observed by President Beckwith and Professors R. C. Haskell and W. D. Alexander of Oahu College, Rev. L. Lyons of Waimea, Rev. Titus Coan and by W. Lowthian Green. It is the only flow from high up the mountain which succeeded in reaching the ocean.

The great eruption of 1868 had two peculiarities: 1, it was preceded by numerous and violent earthquakes; 2, the place of principal emergence of the lava was low down the mountain, 10,000 feet below the summit. The flows previously described came from small orifices 10-12,000 feet above the sea, and it took the lava a long time to discharge. The one low down discharged in three or four days out of a long rent in the rock as much material as came from the higher openings for many months. The nature of the eruption was not understood at first, because it was so different from what had been previously observed from either Mokuaweoweo or Kilauea; save that it is now seen to have been like the discharge from Kilauea in 1840 near Nanawale. The chief observers were Messrs. T. Coan, H. M. Whitney, Dr. William Hillebrand, F. S. Lyman and other residents of the disturbed district.

MOKUAWEOWEO IN 1880-81.

May 1, 1880, at 9 p. m., the large summit crater burst out as a large lurid light with a roar resembling thunder. At 10:05 p. m. there was an additional eruption from the crater to the north of Mokuaweoweo, apparently as large as the first. At 11 p. m. there was still another; this time southwesterly from the first, making in all three active fires on the top and slopes of Mauna Loa.

The greater part of the lava came out in the first few weeks of its history. In four months' time the Hilo stream was about twenty-six miles long and within seven miles of Hilo; June 28th, its was within five miles; July 18th, about two miles; and August 10th, nine months after the outbreak, the stream stopped at a stone-wall near a sugar mill, three-fourths of a mile from Hilo. June 30th, the velocity was measured and found to be seventy-five feet an hour. Had the flow been concentrated in one stream the town of Hilo would have been covered up.

THE DISPLAY OF 1899.

Upon the Mauna Kea side of the mountain the principal crater developed at this time is called the "Dewey Crater."

The 1899 and older flows started from near the crest of a ridge or watershed and extended from the summit northeasterly, including Puu Ulaula and Kulani. The points of eruption are so near the crest that a slight change in its position would cause the lava to flow toward the north (Kea) or toward the south (Kau). The 1899 flow was thought at one time to be moving south, but it finally discharged north, and continued to run till July 26, having a length of fifteen miles and a width of about a mile along its lower course. It consisted chiefly of "*a-a.*"

A column of smoke constantly arose from the points of ejection, visible on all sides. It expanded as it arose, and closely resembled the so-called "pine tree" shown on photographs of eruptions from Vesuvius. The northeast trade wind does not reach the altitude of the outbursts; hence the vapors may arise vertically and be spread out on all sides like an enormous umbrella. While the south wind blew, the smoke cloud reached Honolulu, two hundred miles distant. Some people observed a distinctly sulphurous odor, while one gentleman asserts that he had been clearly struck in the face by particles of the volcanic dust. July 17, the steamer Mariposa observed this smoke, some six hundred miles to the northeast. Similarly the officers of the Morning Star found themselves unable to take the customary observations for latitude at an equally great distance to the southwest. The diameter of the area obscured must have considerably exceeded 1,200 miles, as the observations reported were much to the north of the major axis.

THE MOHOKEA CALDERA.

Upon the southwest flank of Mauna Loa the evenness of the slope is interrupted by the presence of an irregular pit, as if the rock had been removed by an immense scoop and it is thought to have been once an active caldera. It has been hollowed out from the basaltic sheets of Mauna Loa. The total area is about thirty square miles.

PHASES IN THE DEVELOPMENT OF THE HAWAIIAN CALDERAS.

It is easy to speculate on the relations of the several Hawaiian calderas.

At first there is a simple crater discharging lava from the summit of a dome.

Secondly, the lava is not produced in sufficient quantity to flow over the margin; the opening is sealed and then the outermost crust breaks up. The crust is too vast to be absorbed, blocks of it will be elevated; other sections will be absorbed and the outer wall on the makai side may give way. There will be discharges on the lower side. This may be the Mohokea stage.

Thirdly, all the segments of the crust fall into the reservoir beneath; vertical walls encircle a pit. This is the stage of Kilauea and Mokuaweoweo.

Fourthly, the caldera with encircling walls is formed, but the lower walls give way. Great rivers of lava flow to the sea. As the fires die down several craters are developed on the principal floor. This is Haleakala.

Fifthly, the eruptions of the smaller craters like Halemaumau multiply and the whole pit is filled. The caldera is smothered, the smaller craters continue to be developed until the internal reservoir is exhausted. This is the Mauna Kea stage.

THE HISTORY OF KILAUEA.

Usually the first eruption from the volcano is said to be that of 1790, when Keoua and his soldiers were killed by the ejections from Kilauea. Professor Hitchcock has made use of the early traditions of the Hawaiians, arguing that they may be relied upon as truthful accounts of eruptions. The following is a list that he has made out for the eruptions preceding the visit of Ellis in 1827:

Active at first immigration under Wakea, A. D. 140.

The same at second immigration in 1090.

Average of one for every reign—three per century—fifty in all.

Pele's conflict with Tamapuaa, 1175.

Pele's conflict with Keariikukua in Kapoho; Kariwari chased to sea, 1340-1380.

Reign of Liloa, neighborhood of Keanakakoi, 1420.

Time of Arapai at Kaimu, 1740.

Three hills west of Kapoho, Honuaura, Malama and Mariu, 1788.

Keoua at Kilauea, 1790.

The daring descent of the Princess Kapiolani into the volcano about 1824, when Pele was defied to do her worst, was described in verse by the Poet Tennyson, and copied into this book. This poem cannot be found in any edition of Tennyson's works, but bears all the marks of authority, although the place where it first appeared is not stated.

All the eruptions of Kilauea from 1823 to 1908 are fully described. The record book has been freely quoted to show the conditions at every year of its history. We have no space here to mention the descriptions of the several periods of activity and rest, and will only say that the author regarded the break-down of 1894 as representing the climax in the history of the volcano. For about two years the liquid lava had been accumulating till the pit of Halemaumau overflowed its boundaries. The borders of the fused lava cooled more quickly than the interior; when it resulted that a refrigerated rim formed around the border of the lake, having the shape of an inverted saucer. The interior was so hot that visitors did not dare to approach it, contenting themselves with the view of it from Uwekahuna. Being the most important feature in the whole history of Kilauea its representation is given in the frontispiece of the book at the time the lava reached to the level of 285 feet below the volcano house, 3,755 feet above the sea. If the lava should fill up the low ground to the south, and the stream continue to flow, there would be a discharge into Kau from Halemaumau, for the rim of the volcano is scarcely higher than the level of the lake in 1894.

The breakdown of the lake in July of that year was graphically described by L. A. Thurston. The surface fell 319 feet in a short time. For the ensuing ten years visitors were disappointed and fears were expressed that the volcano would no longer be interesting; but it has recovered itself during the past two years. Part IV. of the book specially describes the peculiarities of the Hawaiian volcanoes with an interesting description of the ordinary work of the volcanoes, too lengthy for insertion here.

The characteristics of the eruptions from Kilauea are very much like those from Mokuaweoweo:

1. The influx of lava at the beginning was universal. In one case there seemed to be fire seen from Puna without further eruption as reported by Mrs. S. J. Lyman, Feb. 21, 1889.
2. Of eruptions from places high up may be cited the flows in Kilauea-iki in 1832 and 1868, and from Keanakakoi May 21, 1877.
3. There were three discharges from vents comparatively low down; in 1823, from the altitude of 2,700 feet; in 1840, from the altitude of 1,244 feet, and in 1868, from the altitude of 1,700 feet. In the earlier history, the eruptions of 1175, 1340, 1740 and 1788 belong to that class.
4. Emanations of smoke and steam are almost continuous.
5. Only three submarine discharges are mentioned in the table, in 1884 and 1906 and 1907.

In addition to these Kilauea may add another conclusion, that in 1420 and 1790 there were explosive eruptions.

SYMPATHY BETWEEN MAUNA LOA AND KILAUEA.

Much has been written upon the question as to how our two great volcanoes stand related to each other.

The similarity of the rocks indicates a consanguinity. Both carry basalts with or without olivine, the same specific gravity and various minute details of composition.

Both are calderas and discharge their lava in similar ways.

But the main question is still, why should there exist only twenty miles apart two columns of liquid lava approximately 10,000 and 3,500 feet in altitude above the sea? If both come from the same reservoir why should not the discharge be from the end of the lower arm of the syphon, especially when the upper arm is filled? Or why should there not be a sympathetic action between the eruptions? Observers have often said that one volcano was asleep while the other was in action.

The best starting point in this discussion is a comparison of the correspondencies and differences between the eruptions of these neighboring volcanoes, citing only those that are well known:

Mauna Loa.	Kilauea.	Mauna Loa.	Kilauea.
....	1823	....	1879
1832	1832	1880-1	....
....	1840	....	1886
1843	....	1887	1887
1849	1849	....	1891
1851-2	....	....	1894
1855	1855	1896	....
1859	....	1899	....
1865-6	1866	....	1902
1868	1868	1903	....
1872-7	....	1907	1907
1877	1877	....	1908

Averaging the figures so that when the eruptions occur exactly synchronously or during the same calendar years they will be on the same horizontal line, and having the eruptions that do not agree placed between the others, the conclusions suggested are almost startling.

Second, Mr. Green finds sympathy in the action between the two volcanoes not merely when the eruptions are synchronous but when increased activity has been observed in the supposed quiescent column either shortly before or after the main outbursts. Lava does not exhibit as clearly as water the tendency to preserve a level, because it is viscid even at high temperatures. In all cases of the Mauna Loa eruptions at high altitudes the lavas in Kilauea have also been high, though not to the point of discharge.

Third. The intervals between the periods of joint action are somewhat suggestive of an approximate twenty year cycle, the figures being in order from 1832, 17, 6, 13, 19, 20. Possibly the 1855 episode was a supplement, as the intervals of 6 and 13 add up to 19.

Fourth. The old notion that volcanoes are safety valves is not so far astray after all. It is pressure from below that gives rise to eruptions. If relief is not afforded by discharges at high levels, the tension brings on earthquakes low down, and after great chasms have been opened the lava flows out and then quietude is restored.

It is conceivable that the retaining walls might be strong enough to withstand the pressure down to or below the sea level. If so the probability would favor the coming of a violent explosion like those from Vesuvius or Tarawera; unless the discharges in the ocean as in 1844, 1877, 1884, etc., afforded the proper relief.

Of those who have explored the volcanoes or have been identified with original views in respect to vulcanism, the origin of the earth's physical features and certain atmospheric phenomena connected with eruptions, Titus Coan, Sereno E. Bishop, W. T. Brigham and C. E. Dutton stand out conspicuously. Citations from the publications of all of them have been freely made in this book.

The "Reference List of Principal Articles that have appeared in the Hawaiian Annuals from their commencement," which has been a feature for convenience the past several years, is discontinued with our last issue, to which readers may refer. It embraced the years 1875 to 1908 inclusive, and though divisioned under its various subjects was so losing its handy character from its combrousness as to make more apparent the need of a well prepared index, a convenience that may come in due course if time permits and sufficient inducement warrants the labor and expense it would entail.

IN MEMORIAM.—The ANNUAL loses two valuable contributors this past year in the deaths of Dr. Sereno E. Bishop, of this city, and Gorham D. Gilman, of Newton, Mass. The former leant his aid on scientific subjects of which his "Cold current system of the Pacific" and "Geology of Oahu," have received frequent mention, and in his writings for the proper recognition of the importance of Hawaii's strategic position he was father of the phrase "Cross roads of the Pacific," now used extensively in promotion literature. Mr. Gilman's writings were rich in reminiscences of his life and events in the formative years of constitutional government in Hawaii, of which this number bears—what he wrote would likely be—"his last." He was loyal to Hawaii and its people, ever and alway, and his voice and pen ever ready to advance its interests as he saw the opportunity.

BRITISH ship Celtic Chief, from Hamburg, with fertilizer, ran on the reef to leeward of the entrance in making port at dusk, Dec. 5th. Fortunately fine weather prevailed, and by lightering much of the cargo she was finally hauled off by aid of the German warship Arcona, on the 10th, after various unsuccessful attempts by several of the inter-island steamers and tug.

THE recent public meeting in Honolulu, called for the purpose of memorializing Congress for the suspension of the Coastwise Navigation Laws in its application to the passenger traffic between these islands and the mainland, was so unanimous in its denunciation of an Act so un-American in principal, so unjust in its workings, and so detrimental to the progress of Hawaii in its restriction on tourist travel, that a resolution to the following effect carried with but one dissenting voice:

'While earnestly and loyally desiring the restoration of the American merchant marine * * we regard the enforcement of the Coastwise Navigation Laws as to the carrying of passengers between Hawaii and the mainland until there shall be sufficient American vessels to meet the demand, as a hardship and injustice to Hawaii, not justified; and we therefore respectfully ask Congress to suspend its application in this respect to tnese islands until such time as the President, or such officer as Congress may name, shall find that there are sufficient American vessels engaged in carrying passengers between Hawaii and the mainland to meet all requirements.'

List of Sugar Plantations, Mills and Cane Growers Throughout the Islands.

Those marked with an asterisk (*) are planters only; those marked with a dagger (†) are mills only; all others are plantations complete, owning their own mills. (Corrected to Dec. 1, 1909.)

NAME.	LOCATION.	MANAGER.	AGENTS
Apokaa Sugar Co.*	Ewa, Oahu	G. F. Renton	Castle & Cooke
Ewa Plantation	Ewa, Oahu	G. F. Renton	Castle & Cooke
Gay & Robinson*	Makaweli Kauai	Gay & Robinson	H.Wat'h'se Tr. Co.
Grove Farm*	Nawiliwili, Kauai	Ed. Broadbent	Hackfeld & Co.
Hakalau Plant. Co.	Hilo, Hawaii	J. M. Ross	Brewer & Co.
Halawa Sugar Co.	Kohala, Hawaii	T. S. Kay	H.Wat'h'se Tr. Co.
Hamakua Mill Co.	Hamakua, Hawaii	A. Lidgate	Davies & Co.
Hawi M. & P. Co.	Kohala, Hawaii	John Hind	Hind, Rolph & Co.
Haw. Agr. Co	Kau, Hawaii	W. G. Ogg	Brewer & Co.
Haw. Com. & S. Co.	Puunene, Maui	F. F. Baldwin	Alex. & Baldwin
Hawaiian Sugar Co.	Makaweli, Kauai	B. D. Baldwin	Alex. & Baldwin
Hawaii Mill Co	Hilo, Hawaii	W. H. Campbell	Hackfeld & Co.
Hilo Sugar Co	Hilo, Hawaii	John A. Scott	Brewer & Co.
Honolulu Plant. Co.	Halawa, Oahu	Jas. Gibb	Brewer & Co.
Honokaa Sugar Co.	Hamakua, Hawaii	K. S. Gjerdrum	Schaefer & Co.
Honomu Sugar Co.	Hilo, Hawaii	Wm. Pullar	Brewer & Co.
Hutchinson S. P. Co.	Kau, Hawaii	C. Wolters	Brewer & Co.
Kaeleku Sugar Co.	Hana, Maui	J. Chalmers	Davies & Co.
Kahuku Plantation	Kahuku, Oahu	Andrew Adams	Alex. & Baldwin
Kaiwiki Sugar Co.	Ookala, Hawaii	Geo. McCubbin	Davies & Co.
Kekaha Sugar Co.	Kekaha, Kauai	H. P. Faye	Hackfeld & Co.
Kilauea S. Plant. Co.	Kilauea, Kauai	J. R. Myers	Brewer & Co.
Kipahulu Sugar Co.	Kipahulu, Maui	Ah Ping	Hackfeld & Co.
Kohala Plantation	Kohala, Hawaii	Geo. C. Watt	Castle & Cooke
Koloa Sugar Co	Koloa, Kauai	C. H. Wilcox	Hackfeld & Co.
Kona Develpmt Co.	Kona, Hawaii	W. M. McWayne	Hawn. D'l'pmt Co.
Koolau Agr. Co	Koolau, Oahu	J. J. Darling	Hawn. D'pmt Co.
Kukaiau Mill Co.†	Hamakua, Hawaii	E. Madden	Davies & Co.
Kukaiau Plant. Co.	Hamakua, Hawaii	Albert Horner	Hackfeld & Co.
Laie Plantation	Laie, Oahu	S. E. Wooley	Alex. & Baldwin
Laupahoehoe S. Co.	Laupahoehoe, Ha.	C. McLennan	Davies & Co.
Lihue Plantn. Co.	Lihue, Kauai	F. Weber	Hackfeld & Co.
Makee Sugar Co.	Kealia, Kauai	G. H. Fairchild	
Maui Agrl. Co	Haiku, etc., Maui	H. A. Baldwin	Alex. & Baldwin
McBryde Sugar Co.	Wahiawa, Kauai	W. Stodart	Alex. & Baldwin
Niulii Mill & Plant.	Kohala, Hawaii	Robert Hall	Davies & Co.
Oahu Sugar Co	Waipahu, Oahu	E. K. Bull	Hackfeld & Co.
Olaa Sugar Co	Olaa, Hawaii	Jno. Watt	Bishop & Co.
Olowalu Sugar Co.	Olowalu, Maui	Geo. Gibb	Brewer & Co.
Onomea Sugar Co.	Hilo, Hawaii	John T. Moir	Brewer & Co.
Paauhau S. Plant. Co.	Hamakua, Hawaii	Alex. Smith	Brewer & Co.
Pacific Mill (†)	Hamakua, Hawaii	Aug. Ahrens	Schaefer & Co.
Pepeekeo Sugar Co.	Hilo, Hawaii	Jas. Webster	Brewer & Co.

List of Sugar Plantations, Mills and Cane Growers Throughout the Islands—Continued.

NAME.	LOCATION.	MANAGER	AGENTS.
Pioneer Mill Co.,Ltd.	Lahaina, Maui	W. Weinzheimer	Hackfeld & Co.
Puakea Plant. Co.*	Kohala, Hawaii	H. R. Bryant	H.Wat'h'se Tr. Co.
Puako Plant Co	S. Kohala, Haw.	J. C. Searle	Hind, Rolph & Co.
Union Mill Co	Kohala, Hawaii	H. H. Renton	Davies & Co.
Waiakea Mill Co.	Hilo, Hawaii	C. C. Kennedy	Davies & Co.
Waialua Agrl. Co.	Waialua, Oahu	W. W. Goodale	Castle & Cooke
Waianae Plantation	Waianae, Oahu	Fred Meyer	J. M. Dowsett
Wailuku Sugar Co.	Wailuku, Maui	H. B. Penhallow	Brewer & Co.
Waimanalo S. Co.	Waim'nalo, Oahu	Geo. Chalmers	Brewer & Co.
Waimea Sug. M. Co.	Waimea, Kauai	Jno. Fassoth	Castle & Cooke

REISSUE OF DIBBLE'S HISTORY.

THE republication of this valuable work on the Hawaiian Islands need no apology, from the fact that a constant demand has long existed for information pertaining to their earlier history of which no more truthful account exists than Dibble's, gathered as it was from native sources at a period when the events recorded were fresh in the minds of the narrators, the value of which has been acknowledged by all subsequent historians. The high consideration in which it has been held as an authority is sufficient guarantee of its recognized worth in answering the demands for a work embracing the period from the earliest legendary history of the abrogines to the occupation of the Islands by Great Britain in 1843.

No liberty has been taken in alteration of the original text, further than was necessary in the correction of typographical errors and the elucidation of a few paragraphs not sufficiently plain for readers unfamiliar with the times and incidents alluded to, and to embody as its closing chapter what was an Addenda to a portion only of the edition, and which had two or more corrections during its printing to meet the author's views, as found in his letters of that period to Dr. Anderson of the A. B. C. F. M.

To make the book more valuable for reference, a table of contents has been arranged for each chapter; the longer foot-notes transferred to appendices at the end of the volume, and a carefully prepared index annexed.

A History of the Sandwich Islands by Sheldon Dibble, 12 mo. cloth, 428 pp., Thos. G. Thrum, publisher, Honolulu, T. H., 1909.

HAWAIIAN SUGAR CROPS IN TONS, 1904-1909.

From Table Prepared for Hawaiian Planters' Association, by W. O. Smith, Secretary.

Prior years of this table, originating in 1891, will be found in Annuals since 1901.

ISLANDS.	1904	1905	1906	1907	1908	1909
Production of Hawaii	122,865	126,405	137,250	143,891	180,159	172,341
" " Maui	77,985	100,434	102,960	104,772	122,629	134,605
" " Oahu	102,919	123,095	113.750	119,273	137,013	138,423
" " Kauai	64,606	76,314	74.753	72,081	81,322	89.787
Grand Total	367,475	426,248	429,213	440,017	521,123	535,156
HAWAII PLANTATIONS.						
Waiakea Mill Co.	6,151	7,661	10,766	8,186	9,761	9,486
Hawaii Mill Co.	1,728	1,438	1,825	1,800	2,818	2,838
Hilo Sugar Co.	7,701	9,971	11,751	11,649	12,853	12,291
Onomea Sugar Co.	10,940	11,049	13,930	12,432	17,006	14,416
Pepeekeo Sugar Co	4,907	6,167	6,477	6,677	7,590	6,873
Hononu Sugar Co	5,489	5,909	5,852	5,502	7,511	6,041
Hakalau Plantation Co.	8,396	10,862	12.869	11,914	12,834	11,586
Laupahoehoe Sugar Co	4,336	5,866	7,864	7,848	7,944	8,004
Ookala Sugar Plantation Co.	2.214	3,712	3,223	5,352	5,195	6,646
Kukaiau Plantation Co	1,275	1,415	2,154	2,103	2,141	2,225
Kukaiau Mill Co	1,274	1,416	1,435	1,402	1,427	1,483
Hamakua Mill Co.	4,691	5,925	6,358	6,835	12,355	8,293
Paauhau Sugar Pl'nt'tion Co.	7,533	8,006	8,795	7,857	10,448	9,315
Honokaa Sugar Co	7,402	6,895	7,940	6,898	7,657	10.533
Pacific Sugar Mill	3,388	4,342	4,331	2,931	3,459	5,263
Niulii Mill and Plantation	1,189	1,645	2,226	2,501	2,452	2,768
Halawa Plantation.	1,016	925	1,036	1,615	1,958	1,135
Kohala Sugar Co	2,663	3,350	3,300	2,400	4,914	5,570
Union Mill Co.	1,776	2,166	2,570	2,828	3,259	3,160
Hawi Mill	3,631	3,687	4,389	5,296	7,125	6,011
Kona Development Co. *	897	......	......	......	1,000	1.271
Hutchinson Sugar Plntn. Co.	5,741	7,107	6,940	7,063	9,628	4,712
Hawaiian Agricul. Co	10,954	1,620	826	11,630	10,274	11,406
Puakea Plantation	201	262	398	400	661	992
Olaa Sugar Co	13,788	11,361	9,405	9,431	15,795	} 19,179
Puna Sugar Co	3,146	3,147	867	1,172	1,691	
Puako Plantation	438	500	223	169	403	835
	122,865	126,405	137.750	143,891	180,159	172,341

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* Succeeding Kona Sugar Co.

HAWAIIAN SUGAR CROPS, 1904-1909 - Continued.

MAUI PLANTATIONS.	1904	1905	1906	1907	1908	1909
Kipahulu Sugar Co......	1,415	1,324	1,464	1,809	1,843	1,960
Kaeleku Plantation Co....	2,662	2,720	850	2,702	3,026	4,004
Maui Agriculture Co......	13,521	17,820	19,861	20,220	22,627	28,808
Haw'n Coml & Sug. Co..	29,829	39,411	43,652	44,143	56,150	52,725
Wailuku Sugar Co.	6,451	7,516	7,828	7,425	10,072	17,761
Olowalu Co..............	1,125	1,652	1,635	1,448	1,765	1,829
Pioneer Mill Co., Ltd....	17,036	25,581	22,509	23,099	27,146	27,518
Kihei Plantation Co., Ltd.	5,461	4,410	5,161	3,926	†	....
Maui Sugar Co...........	485	....	....	....	....	....
	77,985	100,434	102,960	104,772	122,629	134,605
OAHU PLANTATIONS.						
Waimanalo Sugar Co.....	2,963	3,428	4,148	3,186	4,242	4,404
Laie Plantation..........	597	857	1,112	873	971	829
Kahuku Plantation Co....	6,360	7,431	6,689	6,500	6,519	6,487
Waialua Agricultural Co.	18,682	19,722	20,788	22,614	30,376	32,267
Waianae Co.............	5,500	5,128	5,490	6,214	5,686	6,469
Ewa Plantation Co......	29,797	32,380	29,302	31,790	33,919	33,949
Apokaa Sugar Co........	874	454	865	461	984	432
Oahu Sugar Co..........	20,870	33,589	26,710	28,457	35,320	34,651
Honolulu Plantation Co.	16,376	20,106	18,646	19,178	18,996	18,688
Koolau Agricultural Co..	......	....	....	....	....	247
	102,019	123,095	113,750	119,273	137,013	138,423
KAUAI PLANTATIONS.						
Kilauea Sugar Plntn Co.	1,850	2,290	2,700	3,844	3,194	4,975
Makee Sugar Co.........	7,840	8,335	7,986	6,696	7,408	4,664
Lihue Plantation Co......	14,611	14,185	16,005	14,127	14,445	15,780
Grove Farm Plantation...	1,679	1,679	1,933	1,807	2,508	3,376
Koloa Sugar Co..........	6,172	6,172	5,570	5,553	7,361	7,303
McBryde Sugar Co.......	10,535	13,136	11,024	7,890	11,294	13,686
Hawaiian Sugar Co.......	11,493	19,062	18,616	20,140	21,633	23,788
Gay & Robinson........	1,665	2,151	2,099	2,590	2,675	3,354
Waimea Sugar Mill Co....	627	1,305	1,550	1,425	1,790	1,707
Kekaha Sugar Co........	7,447	7,318	6,626	7,329	8,283	10,385
Estate of V. Knudsen....	687	680	644	680	731	769
Total...............	64,606	76,314	74,753	72,081	81,322	89,787

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†Now under the Hawaiian Commercial and Sugar Co.

POSTAL SERVICE, TERRITORY OF HAWAII.

Corrected to December 1, 1909.

Frank J. Hare, Inspector in Charge.
Geo. W. Carr, Asst. Sup't. Railway Mail Service.
Jos. G. Pratt, Postmaster.
Jos. Kubey, Asst. Postmaster; Wm. McCoy, Chief Registry Clerk; F. E. Colby, Chief Money Order Clerk; W. C. Kenake, Chief Mailing Clerk; F. T. Sullivan, Supt. of Delivery.

POSTMASTERS ON HAWAII.

Hilo	Geo. Desha
Pepeekeo	Geo. Watt
Honomu	Wm. Hay
Kawaihae	S. K. Kamaipelekane
Mahukona	R. R. Elgin
Kukuihaele	W. Horner
Paauhau	Alex. Smith
Kohala	Miss M. R. Woods
Paauilo	Anthony Lidgate
Laupahoehoe	E. W. Barnard
Ookala	Jas. Johnson
Honokaa	A. B. Lindsay
Mountain View	H. G. Junkin
Kalapana	Dan'l Kaloi
Volcano House	D. Lycurgus
Keauhou	Mrs. H. L. Kawewehi
Holualoa	L. S. Aungst
Kailua	John P. Curts
Kealakekua	Robt. V. Woods
Napoopoo	J. A. Luis
Hoopuloa	W. H. G. Arnemann
Hookena	L. P. Lincoln
Pahala	T. C. Wills
Honuapo	C. P. Akamu
Waiohinu	Anna H. McCarthy
Naalehu	Carl Wolters
Hakalau	Wm. Ross
Olaa	John Watt
Papaaloa	J. Hay Wilson
Lalamilo	J. C. Searle

POSTMASTERS ON MAUI.

Lahaina	Arthur Waal
Wailuku	M. T. Lyon
Makawao	A. F. Tavares
Hana	N. Omsted
Puunene	H. P. Baldwin
Kaupo	Jas. Keawe
Makena	D. Kapohakukimohewa
Kihei	
Honokohau	R. C. Searle
Kipahula	Mrs. J. Glenn
Kahului	J. N. S. Williams
Paia	D. C. Lindsay
Hamakuapoko	W. F. Mossman
Haiku	Jas. Lindsay
Keanae	J. W. K. Halemano
Nahiku	C. J. Austin
Waiakoa	Joaquin Vincent
Keokea	L. C. Akana

POSTMASTERS ON OAHU.

Aiea	Geo. J. Wond
Pearl City	J. P. Keppler
Watertown	Jas. H. Boyd
Waipahu	J. H. Travis
Wahiawa	W. E. Skinner
Ewa	Geo. F. Renton
Waianae	F. Meyer
Waialua	C. A. De Cew
Haleiwa	Clifford Kimball
Kahuku	Andrew Adams
Laie	S. W. Woolley
Kahana	M. Kaanaana
Hauula	Andrew Aubrey
Punaluu	D. Kaapa
Waikane	Sam'l Waiwi
Heeia	Frank Pahia
Waimanalo	A. Irvine

POSTMASTERS ON KAUAI.

Lihue	Frank Crawford	Kealia	Jno. W. Neal
Koloa	A. Buchholtz	Kilauea	J. R. Myers
Hanapepe	H. H. Brodie	Kekaha	A. F. Knudsen
Makaweli	B. D. Baldwin	Waimea	C. B. Hofgaard
Eleele	Mrs. J. I. Silva	Hanalei	Mrs. S. B. Deverill
Homestead	M. R. Jardin		

POSTMASTERS ON MOLOKAI AND LANAI.

Pukoo	D. K. Ilae	Keomoku	Chas. Gay
Pelekunu	J. Kapahu	Kalaupapa	J. S. Wilmington
Halawa	J. Nakaleka	Kaunakakai	Joel Kaoo

POST OFFICE INFORMATION.

Office hours of the General Delivery are from 6 a. m. to 12 o'clock midnight. On legal holidays the time is from 8 a. m. to 9 a. m. On Sundays, from 9 to 10 a. m.

Hours of the Stamp and Registry Department are from 8 a. m. to 6 p. m., and of the Money Order Department from 8.30 a. m. to 5 p. m.

The General Delivery is open (except Sundays and holidays) from 6 a. m. till midnight, for the delivery of mail, registering of letters and issuance of Money Orders.

Inter-Island mails close forty-five minutes before the sailing of steamers, excepting steamers sailing at noon Tuesdays and Fridays, which close at 11 a. m. For foreign ports the ordinary mails close one hour prior to steamers' departure.

Registry office closes two and a half hours before steamer departure.

RATES OF POSTAGE, DOMESTIC.

First class matter (letters, etc.)	2 cents per oz. or fraction
Second class (newspapers and periodicals)	1 cent per 4 oz. or fraction
Third class (books, circulars)	1 cent per 2 oz. or fraction
Fourth class (merchandise—limit of weight 4 lbs.)	1 cent per oz. or fraction
Registration Fee (additional postage)	10 cents
Immediate Delivery Stamp (additional to postage)	10 cents
Postal Cards	1 cent each

FOREIGN POSTAGE.

The rate to all foreign countries except Great Britain, Canada and Mexico are: Letters per ounce or fractional part, 5 cents for first ounce, and 3 cents for each additional ounce. Printed matter, 1 cent for each 2 ounces or part. Postal Cards, 2 cents each.

Parcels of Merchandise, 12 cents per pound. Limit of weight, 12 pounds.

TERRITORIAL REGISTER AND DIRECTORY FOR 1910.

Corrected to December 1, 1909.

TERRITORIAL OFFICIALS.

Walter F. Frear..................Governor
E. A. Mott-Smith.................Secretary
C. R. Hemenway...........Attorney General
D. L. Conklin...................Treasurer
Marston Campbell........Supt. Public Works
W. H. Babbitt.......Supt. Public Instruction
J. H. Fisher.........................Auditor
Wm. Henry...................High Sheriff
C. H. McBride....Private Secy, to Governor

Jonah K. Kalanianaole.................
..................Delegate to Congress

LEGISLATIVE BODY.

SENATORS.

Hawaii—J. T. Brown, D. K. Baker, R. H. Makekau, P. P. Woods.
Maui—W. J. Coelho, S. E. Kalama, W. T. Robinson.
Oahu—W. O. Smith, C. J. McCarthy, C. F. Chillingworth, F. R. Harvey, H. T. Moore, E. W. Quinn.
Kauai—E. A. Knudsen, G. H. Fairchild.

REPRESENTATIVES.

Oahu—A. D. Castro, E. A. C. Long, S. P. Correa, J. C. Cohen, E. A. Douthitt, A. S. Kaleiopu, D. K. Kama, D. Kamahu, J. K. Kamanoulu, R. Kinney, E. L. Like, R. W. Shingle.
Maui—J. Nakaleka, M. P. Waiwaiole, E. B. Carley, J. K. Hihio, J. W. Kawaakoa, R. J. K. Nawahine.
Hawaii—J. W. Moanauli, H. L. Holstein, H. M. Kaniho, G. F. Affonso, M. T. Furtado, H. L. Kawewehi, M. K. Kealawaa, M. K. Makekau.
Kauai—W. J. Sheldon, C. A. Rice, J. H. Coney, G. H. Huddy.

NATIONAL GUARD OF HAWAII.

Walter F. Frear....................
......Governor and Commander in Chief

GENERAL STAFF OFFICERS.

John W. Jones....Col. and Adjutant General
Charles B. Cooper....Lt. Col. and Surg. Genl.
John W. Short......Lt. Col. and Q. M. Genl.
Joseph H. Fisher....Lt. Col. and P. M. Genl.
Marston Campbell...Lt. Col. and C. E. Officer
William L. Moore....Major Surg. Med. Dept.
Emil C. Peters..........Captain J. A. Genl.
Elmer T. Winant.....Captain Insp. S. A. P.
George E. Smithies......Captain Ord. Officer
James H. Raymond..Captain Surg. M. Dept.
William Osmers........1st Lieut. Med. Dept.

FIELD OFFICERS.

Charles W. Ziegler...........Col. 1st Infy.
Arthur Coyne..................Lieut. Col.
William R. Riley............Major 1st Batt.
Gustave Rose..............Major 2nd Batt.

REGIMENT STAFF OFFICERS.

Edward T. Simpson...............Chaplain
Thomas P. Cummins......Capt. and Adjutant
Merle Johnson...........Captain and Q. M.
Arthur W. Neely........Captain and Comsy.

Department of Judiciary.

SUPREME COURT.

Chief Justice............Hon. A. S. Hartwell
Associate Justice..........Hon. A. A. Wilder
Associate Justice........Hon. Antonio Perry

Clerk Judiciary Dept..........Henry Smith
First Judge 1st Circuit, Oahu..........
..................Hon. J. T. De Bolt
Second Judge 1st Circuit, Oahu........
................Hon. W. L. Whitney
Third Judge 1st Circuit, Oahu..........
................Hon. W. J. Robinson
Second Circuit, Maui...Hon. S. B. Kingsbury
Third Circuit, Hawaii.................
...............Hon. J. A. Matthewman
Fourth Circuit, Hawaii....Hon. C. F. Parsons
Fifth Circuit, Kauai..........Hon. J. Hardy

CLERKS OF SUPREME AND CIRCUIT COURTS.

Henry Smith ....ex-officio
Clerk Supreme Court........J. A. Thompson
Clerks, 1st Circuit, Oahu....Job Batchelor,
M. T. Simonton, Jno. Marcallino
Assist. Clerks, Judiciary Dept.........
.........Alex. K. Aona, J. M. Uluhele
Stenographers and Asst. Clerks, Supreme
Court..Miss Kate Kelly, Miss K. M. Cook
Second Circuit, Maui............E. H. Hart
Third Circuit, Hawaii............Thos. Aiu
Fourth Circuit, Hawaii...A. S. Le B. Gurney
W. Ragsdale, Deputy Clerk
Fifth Circuit, Kauai........R. W. T. Purvis

INTERPRETERS, ETC.

Hawaiian Interpreters	C. L. Hopkins, F. W. Beckley
Japanese Interpreter	S. K. Maruyama
Chinese Interpreter	Farm Cornn
Portuguese Interpreter	J. M. Camara

Stenographers: P. M. McMahon, J. L. Horner, Gilson Bell.

C. A. K. Hopkins	Bailiff 1st Judge
H. N. Wiggins	Bailiff 2nd Judge
V. M. Harrison	Bailiff 3rd Judge

DISTRICT MAGISTRATES.

Oahu.

Frank Andrade	Honolulu
W. W. Thayer, Second	Honolulu
S. Hookano	Ewa
J. Kekahuna	Waianae
L. B. Nainoa	Koolauloa
A. S. Mahaulu	Waialua
E. Hore, Second	Waialua
E. P. Aikue	Koolaupoko

Maui.

W. A. McKay	Wailuku
E. H. Rogers	Lahaina
Chas. Copp	Makawao
L. K. Kakani	Hana
J. K. Piimanu	Kipahulu, Hana
Guy Goodness	Honuaula
C. C. Conradt	Molokai
Jno. Haulani	Kalaupapa
J. D. McVeigh, Second	Kalaupapa
S. Kahoohalahala	Lanai

Hawaii.

L. A. Andrews	Hilo
Chas. H. Swain	Hilo
R. H. Atkins	North Kohala
Thos. Nakanelua	South Kohala
H. S. Rickard	North Hilo
Henry Hall	Hamakua
R. A. Lyman	Puna
Walter H. Hayselden	Kau
Chas. H. White, Second	Kau
J. L. Kaulukou	North Kona
Robt. Makahalupa	South Kona
Lyman B. Lincoln, Second	South Kona

Kauai.

Chas. S. Dole	Lihue
J. B. Hanaike, Second	Lihue
D. K. Kapahee	Koloa
Wm. Schelempfennig, Second	Koloa
W. Werner	Hanalei
C. B. Hofgaard	Waimea
J. A. Akina, Second	Waimea
R. Puuiki	Kawaihau

DEPARTMENT OF SECRETARY.

Secretary	E. A. Mott-Smith
Chief Clerk of Department	Henry O'Sullivan
Clerks	H. Klemmer, R. S. Lono

FOREIGN REPRESENTATIVES.

Portugal—Consul General	Senhor A. de Souza Canavarro
Italy—Consul	F. A. Schaefer (Dean of the Consular Corps).
Netherlands	H. M. von Holt
Norway—Acting Consul	W. Pfotenhauer
Denmark	C. Hedeman
Germany	W. Pfotenhauer
Mexico—Acting Consul	W. Lanz
Peru	Bruce Cartwright
Chili—Acting Consul	H. Focke
Great Britain—Consul	R. G. V. Forster
Great Britain—Vice Consul	Geo. F. Davies
Sweden—Consul	Geo. Rodiek
Spain—Vice-Consul (Acting)	A. Marques
France—Consular Agent	A. Marques

Japan—Consul, S. Uyeno; Eleve Consul, ...; Vice-Consul, ...

China—Consul, Tseng Hai.

DEPARTMENT OF ATTORNEY GENERAL.

Attorney-General	C. R. Hemenway
1st Deputy Atty-General	Lorrin Andrews
2nd Deputy Atty-General	E. W. Sutton
Clerk of Department	Saml. Upa
Stenographer	Miss E. Dwight
High Sheriff	Wm. Henry

BOARD OF PRISON INSPECTORS.

Oahu—G. J. Waller, Edward Davis, E. H. Wodehouse.

Maui—Wm. Henning, J. N. K. Keola, H. A. Baldwin.

W. Hawaii—L. S. Aungst, H. H. Renton, M. A. Malakaua.

E. Hawaii—E. N. Holmes, A. B. Lindsay, R. A. Lyman, Jr.

Kauai—A. S. Wilcox, J. M. Lydgate, John Gandall.

TREASURY DEPARTMENT.

Treasurer	D. L. Conklin
Registrar of Public Accounts	H. C. Hapai
Bookkeeper	T. Treadway
Corporation Clerk	Chas. Kaanoi
Stenographer and Typewriter	E. J. Treadway

BUREAU OF CONVEYANCES.

Registrar of Conveyances	C. H. Merriam
Deputy Registrar	Isaac Ihihi

ASSESSORS AND COLLECTORS.

First Division, Oahu.

Chas. T. Wilder	Assessor
A. W. Neely	Deputy 1st Division

T. V. King, P. J. Jarrett, H. Sing Fook, V. Fernandez, Jr., J. H. Harbottle, J. W. Francis, T. Mito, Deputies, Honolulu.

S. L. Kekumano	Ewa and Waianae

Edward Hore	Waialua
J. Kekuku	Koolauloa
H. C. Adams	Koolaupoko

Second Division, Maui.

J. H. Kunewa	Assessor
J. N. K. Keola	Wailuku
G. H. Dunn	Lahaina
A. F. Travares	Makawao
M. H. Reuter	Hana
C. C. Conradt	Molokai and Lanai

Third Dvision, Hawaii.

N. C. Willfong	Assessor
E. K. Kaiwa	North Hilo
G. H. Kaihenui	South Hilo
H. J. Lyman	Puna
W. A. Schwallie	Kau
James Ako	North Kona
L. P. Lincoln	South Kona
W. P. McDougall	North Kohala
W. Vredenburg	South Kohala
Wm. Horner	Hamakua

Fourth Division, Kauai.

J. K. Farley	Assessor
P. Kahlbaum	Koloa
J. K. Kapuniai	Waimea
J. D. Hanaike	Lihue
Ed. Deverill	Hanalei
J. W. Neal	Kawaihau

AUDITING DEPARTMENT.

Auditor	J. H. Fisher
Deputy Auditor	G. W. R. King
Bookkeeper	

Clerks—A. May, Otto F. Heine.

DEPARTMENT OF PUBLIC WORKS.

Superintendent	Marston Campbell
Chief Clerk of Department	Manuel K. Cook

Clerks—O. K. Stillman. B. K. Kane. Miss B. K. Dwight.

Supt. Water Works and Sewers, Honolulu	J. M. Little
Clerks Water Works, Honolulu	Daniel M. Woodward, S. Oneha
Harbor Master, Honolulu	Capt. W. A. Clark
Assistant	Capt. A. N. Tripp

Pilots, Honolulu—Capts. J. C. Lorenson, J. R. Macaulay, M. N. Saunders.

Harbor Master and Pilot, Hilo	Capt. F. Mosher
Pilot, Kahului	Capt. E. H. Parker

BOARD OF IMMIGRATION.

Superintendent	Richard Ivers

Members—Jno. J. Carden, E. H. Wodehouse, H. Craig, A. L. C. Atkinson.

Secretary	A. L. C. Atkinson
Assistant Secretary	Wm. Savidge

HONOLULU PARK COMMISSION.

President	A. S. Cleghorn
Secretary	G. P. Wilder

Marston Campbell (ex-officio), W. M. Giffard, E. S. Cunha, H. E. Cooper, Geo. P. Castle.

GOVERNMENT SURVEYING CORPS.

Marston Campbell	Surveyor
Walter E. Wall	Asst. Surveyor

S. M. Kanakanui, Robt. D. King, H. E. Newton, Assistants.

BOARD OF COMMISSIONERS OF AGRICULTURE AND FORESTRY.

Commissioners—Marston Campbell, President and Executive Officer; D. P. R. Isenberg, H. M. von Holt, Albert Waterhouse, J. M. Dowsett.

Division of Entomology.

E. M. Ehrhorn	Superintendent of Entomology and Inspector
A. Koebele	Consulting Entomologist
D. B. Kuhns	Inspector's Assistant
Miss Melika Peterson	Asst. Clerk and Bibliographer

Division of Forestry.

Ralph S. Hosmer	Superintendent of Forestry
David Haughs	Forest Nurseryman
Miss E. M. Kuhn	Clerk and Stenographer

Division of Animal Industry.

Victor A. Norgaard, V. S.	Superintendent and Territorial Veterinarian
Dr. N. S. Case	Assistant
Dr. J. C. Fitzgerald, Dep. V. S.	Maui
Dr. H. B. Elliott, Dep. V. S.	Hilo

BOUNDARY COMMISSIONERS.

Hawaii	G. F. Parsons, Hilo J. A. Matthewman, Kailua
Kauai	Jacob Hardy

FENCE COMMISSIONERS.

Honolulu—F. T. P. Waterhouse, J. A. Gilman, Manuel K. Cook.

Ewa and Waianae—A. Waterhouse, E. O. White, C. A. Brown.

Waialua—A. S. Mahaulu, R. Kinney, W. P. Thomas.

Makawao—C. D. Lovkin, J. K. Kahookele, Hugh M. Coke.

S. Kona—E. K. Kaaua, L. P. Lincoln, A. Haili.

Kau—J. Monsarrat, C. J. Macomber, Luka Kila.

BOARD OF HEALTH.

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Members—F. C. Smith, Dr. J. T. Wayson, Jas. F. Morgan, C. R. Hemenway, D. Kalauokalani, Sr., Dr. W. D. Baldwin.
General Health Officer......Dr. J. S. B. Pratt
Chief Sanitary Officer.......D. P. Lawrence
Secretary ....C. Charlock
Bacteriologist...........Dr. J. T. McDonald
Inspector Meat and Animals.......................................W. T. Monsarrat
Registrar Births, Deaths and Marriages...................Miss M. Hester Lemon
Chief Clerk................W. K. Simerson
Stenographer ....Miss M. Weir
Food Commissioner and Analyst..............................R. A. Duncan
Supt. Insane Asylum......Dr. C. A. Peterson
Supt. Leper Settlement........J. D. McVeigh
Med. Supt. Leper Settlement..............................Dr. J. W. Goodhue
Sanitary Inspector, Hilo......D. S. Bowman

Government Physicians.

Oahu—

Bruce McV. Mackall.............Honolulu
H. Wood ....Waialua
F. L. Morong ....Kahuku

Maui—

Franklin Burt....................Lahaina
W. F. McConkey ....Makawao
W. B. Deas.........................Hana
Wm. Osmers ....Wailuku
F. L. Sawyer ....Kihei, Kula, etc.

Hawaii—

E. S. Goodhue...............N. & S. Kona
H. L. Ross.....................S. Kohala
B. D. Bond.....................N. Kohala
F. W. Taylor...................Hamakua
C. L. Stow.........................S. Hilo
Archer Irwin ....N. Hilo
S. R. Brown..........................Puna
W. A. Schwallie....................E. Kau
Thos. McMillan....................W. Kau

Kauai—

B. F. Sandow ....Waimea
A. H. Waterhouse...................Koloa
F. L. Putnam ....Lihue
K. Yanagihara ....Hanalei
E. Hofmann..................Kawaihau

COMMISSIONERS OF INSANITY.

A. Lindsay, Jr..................Chairman
Drs. C. B. Cooper, G. H. Herbert.

BOARD OF COMMISSIONERS OF PUBLIC ARCHIVES.

Chairman, ex-officio.........E. A. Mott-Smith
Commissioners—Prof. W. D. Alexander and G. R. Carter.
Librarian ....R. C. Lydecker
Translator ....John Wise

DEPARTMENT OF PUBLIC INSTRUCTION.

Superintendent ....W. H. Babbitt

Commissioners.

Oahu........Mrs. May Wilcox, M. F. Prosser
Maui.........................W. O. Aiken
Hawaii.........Jno. T. Moir, Ella H. Paris
Kauai...................W. H. Rice, Sr.
Traveling Inspector.............Chas. King
Supervising Principal.............J. M. Cox
Secretary.................Miss Daisy Smith
Asst. Secretary..........C. K. Stillman, Jr.
Stenog. and Book Clerk.......H. H. Williams

LIQUOR LICENSE COMMISSIONERS.

City and County of Honolulu.

C. H. Cooke.....................Chairman
C. A. Long.....................Secretary
W. E. Brown, J. H. Craig, N. Watkins.

County of Maui.

J. N. S. Williams................Chairman
Geo. Copp, H. A. Baldwin, C. D. Lufkin, D. C. Lindsay.

County of Hawaii.

John T. Moir...................Chairman
R. A. Lyman...................Secretary
Albert Horner, W. G. Ogg, S. M. Spencer.

County of Kauai.

W. H. Rice, Sr.................Chairman
G. N. Wilcox, W. D. McBryde, J. K. Apolo, A. F. Knudsen.

CONSERVATION BOARD.

J. P. Cooke, Marston Campbell, S. V. Wilcox.

SUNDRY COMMISSIONS.

Fruit Growing and Truck Farming.

E. V. Wilcox, A. W. Carter, T. F. Lansing.

Milk.

W. D. Baldwin, J. A. Rath, F. G. Krauss.

School Fund.

W. R. Farrington................Chairman
W. A. Bowen, Secretary; Edgar Wood.

Stamp Duties and Licenses.

W. L. Stanley, G. F. Bush, R. H. Trent.

Private Wharves.

D. E. Metzger, H. Howell, J. H. Moraigne.

DEPARTMENT OF PUBLIC LANDS.

Marston Campbell.............Commissioner
J. D. Tucker......................Secretary
Henry Peters ....First Clerk
S. K. Kamaiopili ....Second Clerk
Eileen Bertelman..............Third Clerk

Sub-Agents.

1st District, Hilo and Puna.	G. H. Williams
2nd District, Hamakua	
3rd District, Kona and Kau	T. C. White
4th District, Maui	W. O. Aiken
5th District, Oahu	J. D. Tucker
6th District, Kauai	L. M. McKeague; Miss B. Hundley, Asst.

BOARDS OF EXAMINERS.

Medical—Dr. Geo. Herbert, Dr. A. N. Sinclair, Dr. Jas. R. Judd.
Pharmacy—A. J. Gignoux, S. S. Peck, Dr. F. F. Hedeman.
Dental—P. F. Frear, C. B. High, A. J. Derby.

PACKET AGENCIES.

Brewer Line N. Y. Packets—Theo. H. Davies & Co., Ltd.
Matson's Line Sailing Vessels San Francisco—C. Brewer & Co., Ltd.
Canadian and Australian S. S. Line—Theo. H. Davies & Co., Ltd.
Chargeurs Reunis S. S. Line—Theo. H. Davies & Co., Ltd.
Oceanic S. S. Co.'s Line—C. Brewer & Co., Ltd.
Pacific Mail S. S. Co.—H. Hackfeld & Co., Ltd.
Occidental and Oriental S. S. Co.—H. Hackfeld & Co., Ltd.
European Packets—H. Hackfeld & Co., Ltd.
Hawaiian Packet Line, San Francisco—H. Hackfeld & Co., Ltd.
American-Hawaiian S. S. Co.—H. Hackfeld & Co., Ltd.
Matson Nav. Co.—Castle & Cooke, Ltd.
San Francisco and Honolulu—F. A. Schaefer & Co., Ltd.
Alexander & Baldwin Line, San Francisco—Alexander & Baldwin, Ltd.

CHAMBER OF COMMERCE.

President	**J. F. Morgan**
Vice-President	**J. P. Cooke**
Secretary and Treasurer	**H. P. Wood**

Trustees—E. I. Spalding, E. D. Tenney, J. A. Kennedy, E. F. Bishop, M. P. Robinson, C. Hedemann, J. D. Dole, R. Ivers, E. E. Paxton, F. M. Swanzy, A. Gartley, F. Klamp.

MERCHANTS' ASSOCIATION.

Organized March 18, 1901.

President	F. L. Waldron
Vice-President	W. F. Dillingham
Secretary	E. A. Berndt
Treasurer	C. Von Hamm

Directors—G. F. Bush, G. W. Smith, E. H. Paris, T. H. Petrie, C. Du Roi.

HAWAII PROMOTION COMMITTEE.

Representing the Territory of Hawaii, Chamber of Commerce and Merchants' Association.

Organized 1903.

W. A. Bowen, Chairman; W. H. Hoogs, G. F. Bush, Jas. L. McLean.

H. P. Wood	**Secretary**
R. H. Trent	**Treasurer**

HONOLULU STOCK AND BOND EXCHANGE.

Organized August 8, 1898.

President	Z. K. Meyers
Vice-President	W. Williamson
Secretary	Albert Afong
Treasurer	First National Bank

HAWAIIAN SUGAR PLANTERS' ASSOCIATION.

Re-organized Nov. 18, 1895.

President	W. G. Irwin
Vice-President	W. Pfotenhauer
Secretary and Treasurer	W. O. Smith
Assistant Secretary	L. J. Warren
Auditor	**G. H. Robertson**

Trustees—E. D. Tenney, W. G. Irwin, S. M. Damon, F. A. Schaefer, F. M. Swanzy, H. P. Baldwin, W. Pfotenhauer, E. F. Bishop, W. O. Smith.

EXPERIMENT STATION OF PLANTERS' ASSOCIATION.

Experiment Station Staff.

C. F. Eckart	Director
R. C. L. Perkins	Entomologist
Noel Deerr	Sugar Technologist
H. L. Lyon	Pathologist
S. S. Peck	Chemist
E. G. Clarke	Agriculturist
G. W. Kirkaldy	Acting Entomologist
A. Koebele	Consulting Entomologist
R. S. Norris, F. R. Werthmueller, A. E. Jordan	Assistant Chemists
F. W. Terry, Otto H. Sweezey, F. Muir	Assistant Entomologists
L. D. Larsen	Assistant Pathologist
J. H. Wale	Assistant Agriculturist
D. C. Broderick	Field Foreman
G. H. Tuttle	Cashier
W. R. R. Potter	Illustrator
A. Warren	Clerk
J. F. Melanphy	Fertilizer Sampler

HAWAIIAN ENTOMOLOGICAL SOCIETY.

Organized 1905.

President	G. W. Kirkaldy
Vice-President	F. W. Terry
Secretary and Treasurer	**D. B. Kuhns**

The above officers also constitute the Executive Committee.

BOARD OF MARINE UNDERWRITERS—AGENCIES.

Boston	C. Brewer & Co.
Philadelphia	C. Brewer & Co.
New York	Bruce Cartwright
Liverpool	Theo. H. Davies & Co.
Lloyds, London	Theo. H. Davies & Co.
San Francisco	Bishop & Co.
Bremen	F. A. Schaefer

BOARD OF FIRE UNDERWRITERS OF TERRITORY OF HAWAII.

F .A. Schaefer	President
J. A. Gilman	Vice-President
A. R. Gurrey	Secretary
Bishop & Co	Treasurer
H. Hackfeld & Co	Auditor

QUEEN'S HOSPITAL.

Erected in 1860.

President	Hon. A. S. Cleghorn
Vice-President	G. R. Carter
Secretary	Geo. W. Smith
Treasurer	W. W. North
Auditor	Jno. Waterhouse

Surgeons—Drs. V. E. Collins, Jas. R. Judd, C. B. Wood.

Physicians—Drs. C. B. Cooper, A. G. Hodgins, H. V. Murray, G. F. Straub.

Resident Physician	Dr. H. F. Trautman
Oculists and Aurists	Drs. W. G. Rogers, W. L. Moore
Superintendent	J. F. Eckardt
Head Nurse	Miss E. Maloney

Trustees—G. R. Carter, W. W. North, W. E. Brown, A. Gartley, T. C. Davies, G. W. Smith.

LEAHI HOME.

Organized April 4, 1900.

President	Alex. Young

Vice-Presidents—W. O. Smith, C. H. Atherton.

Secretary	Geo. F. Davies
Treasurer	A. W. T. Bottomley
Auditor	J. P. Cooke
Medical Supt	A. N. Sinclair, M. B. C. M.
Asst. Supt	H. Taylor
Matron	Mrs. H. Taylor

Trustees—Alex. Young, J. P. Cooke, C. H. Atherton, T. Clive Davies, A. W. T. Bottomley, W. O. Smith.

SAILORS' HOME SOCIETY.

Organized 1853. Meets annually in December.

President	F. A. Schaefer
Vice-President	A. S. Cleghorn
Secretary	C. H. Atherton
Treasurer	W. W. Hall

Executive Committee—W. W. Hall, W. M. Giffard, F. W. Damon, B. F. Dillingham, A. S. Cleghorn, E. D. Tenney.

THE FARMERS' INSTITUTE.

Organized Jan. 23, 1902.

President	W. T. Pope
Vice-President	F. G. Krauss
Secretary and Treasurer	W. Weinrick, Jr.

Directors—R. S. Hosmer, P. L. Horne and Jared G. Smith.

CIVIC FEDERATION.

Organized Jan. 26, 1905.

President	W. R. Castle
Vice-President	Dr. D. Scudder
Secretary	Ed. Towse
Treasurer	C. H. Dickey

LIBRARY AND READING ROOM ASSOCIATION.

Organized March. Incorporated June 24, 1879.

President	Dr. W. D. Alexander
Vice-President	C. H. Atherton
Secretary	W. A. Bryan
Treasurer	A. Gartley
Auditor	J. H. Fisher
Librarian	Miss Edna I. Allyn
Asst. Librarian	Miss H. E. Sprinks

HAWAIIAN HISTORICAL SOCIETY.

Organized Jan. 11, 1892.

President	Hon. A. S. Hartwell

Vice-Presidents—Dr. W. D. Alexander, Gov. W. F. Frear, Bishop H. B. Restarick.

Recording Secretary	A. Lewis, Jr.
Cor. Secretary	Rev. W. D. Westervelt
Treasurer	W. W. Hall
Librarian	Miss E. I. Allyn

BERNICE PAUAHI BISHOP MUSEUM.

Board of Trustees.

Albert F. Judd	President
E. F. Bishop	Vice-President
A. W. Carter	Secretary
J. M. Dowsett	Treasurer

Samuel M. Damon, W. O. Smith, H. Holmes.

Museum Staff.

William T. Brigham, A. M., D. Sc.	Director
W. H. Dall, D. Ph.	Hon. Curator of Molusca
John F. G. Stokes	Curator of Polynesian Ethnology
Miss Schupp	Assistant and Acting Librarian
C. Montague Cooke, Jr., D. Ph.	Curator of Pulmonata
C. N. Forbes	Botanist
J. W. Thompson	Modeler
John J. Greene	Printer

BAR ASSOCIATION OF HAWAII.

Organized June 28, 1899.

President ....W. A. Kinney
Vice-President ....A. Perry
Secretary ....W. A. Greenwell
Treasurer ....W. L. Whitney
Auditor ....W. C. Parke

PACIFIC SCIENTIFIC INSTITUTE.

Wm. Alanson Bryan..............President
Hon. Walter F. Frear............Chairman
Hon. L. A. Thurston.........Vice-Chairman
Prof. Arthur F. Griffiths...........Secretary
Mr. Richard H. Trent............Treasurer

KILOHANA ART LEAGUE.

Organized May 5, 1894.

President ....D. Howard Hitchcock
Vice-President...........Mrs. A. B. Tucker
Secretary ....Mrs. L. G. Marshall
Treasurer ....Mrs. W. C. Weedon
Auditor ....W. A. Love
Managing Trustee..........B. F. Dillingham

HAWAIIAN MEDICAL ASSOCIATION.

Organized May 24, 1895. Annual Meeting in May.

President ....Dr. St. D. G. Walters
Vice-President ....Dr. W. G. Rogers
Secretary and Treasurer....Dr. V. E. Collins
Drs. C. B. Cooper, W. L. Moore, with the above officers, constitute the Executive Committee.

HAWAIIAN SOCIETY SONS OF THE AMERICAN REVOLUTION.

Organized June 17, 1895.

President......................G. R. Carter
Vice-President ....Dr. C. B. Cooper
Secretary ....L. A. Dickey
Treasurer ....R. J. Pratt
Registrar ....S. M. Ballou

HAWAIIAN EVANGELICAL ASSOCIATION.

Originally Organized 1823.

Constitution revised 1863. Annual Meeting June.

President ....P. C. Jones
Vice-President ....W. W. Hall
Cor. Secretary..........Rev. Wm. B. Oleson
Rec. Secretary........Rev. W. D. Westervelt
Treasurer ....Theo. Richards
Auditor ....F. C. Atherton

WOMAN'S BOARD OF MISSIONS.

Organized 1871.

President ....Mrs. D. Scudder
Recording Secretary......Miss M. L. Sheeley
Home Cor. Secretary....Miss Grace M. Cooke
Foreign Cor. Secretary....Mrs. Edgar Wood
Treasurer.............Mrs. B. F. Dillingham
Asst. Treasurer...........Mrs. W. L. Moore
Auditor ....W. W. Hall

MISSION CHILDREN'S SOCIETY.

Organized 1851. Annual Meeting in June.

President ....G. R. Carter
Vice-President ....F. C. Atherton
Secretary..............Mrs. R. W. Andrews
Recorder ....R. W. Andrews
Treasurer ....L. A. Dickey

YOUNG MEN'S CHRISTIAN ASSOCIATION.

Organized 1869. Annual Meeting in April

President ....R. H. Trent
Vice-President ....W. W. Hall
Rec. Secretary............G. S. Waterhouse
Treasurer ....F. C. Atherton
General Secretary ....Paul Super
Educational Secretary.........A. F. Larimer
Physical Instructor.........Dr. E. H. Hand

YOUNG WOMEN'S CHRISTIAN ASSOCIATION.

Organized 1900.

President ....Mrs. B. F. Dillingham
Vice-President.............Mrs. A. F. Cooke
Secretary ....Mrs. H. M. von Holt
Treasurer ....Miss Carrie Gilman
General Secretary.........Miss C. O. Moyer

WOMAN'S CHRISTIAN TEMPERANCE UNION OF HAWAII.

Organized December, 1884.

President ....Mrs. J. M. Whitney
Vice-Presidents—Mrs. D. Scudder, Mrs. P. C. Jones.
Recording Secretary....Miss Florence Yarrow
Cor. Secretary...........Mrs. E. W. Jordan
Treasurer ....Mrs. Lydia Coan
Auditor ....W. W. Hall

FREE KINDERGARTEN AND CHILDREN'S AID ASSOCIATION.

Organized 1895.

President..............Mrs. Theo. Richards
Vice-Presidents—Mrs. L. L. McCandless, Mrs. L. T. Peck, Mrs. C. H. Cooke.
Recording Secretary..........Mrs. R. Ivers
Treasurer ....Mrs. F. M. Swanzy
Financial Secretaries.................
....Mrs. G. P. Wilder, Mrs. J. R. Judd
Auditor ....D. W. Anderson

ASSOCIATED CHARITIES.

Organized June 7, 1899.

President	S. B. Dole
1st Vice-President	Mrs. C. du Roi
2nd Vice-President	W. D. Westervelt
Secretary	Mrs. J. M. Whitney
Treasurer	Wm. Williamson
Manager	Mrs. E. W. Jordan

STRANGERS' FRIEND SOCIETY.

Organized 1852. Annual Meeting in June.

President	Mrs. A. Fuller

Vice-Presidents—Mrs. E. F. Bishop, Mrs. S. B. Dole.

Secretary	Mrs. S. M. Damon
Treasurer	Mrs. E. W. Jordan
Auditor	E. W. Jordan
Directress	Mrs. E. B. Waterhouse

BRITISH BENEVOLENT SOCIETY.

Organized 1869. Meets Annually.

President (Ex-officio)	H. B. M's. Consul
Vice-President	
Secretary	R. Catton
Treasurer	George Davies

Relief Committee—G. R. Ewart, J. C. Cook, W. H. Baird, F. Harrison, R. Anderson and H. E. McIntyre, with the above officers.

GERMAN BENEVOLENT SOCIETY.

Organized August 22, 1856.

President	F. A. Schaefer
Vice-President	W. Pfotenhauer
Secretary	John F. Eckardt
Treasurer	B. von Damm
Auditor	H. Hugo

HAWAIIAN RELIEF SOCIETY.

Organized 1895.

President	Mrs. C. S. Holloway
Secretary	Mrs. E. S. Cunha
Treasurer	Mrs. F. W. Macfarlane

PORTUGUESE CHARITABLE SOCIETY.

Organized Sept. 1, 1902.

President	J. P. Rodriguez
Vice-President	J. Madeira
Secretary	A. H. R. Vieira
Treasurer	J. D. Marques

CATHOLIC ORPHANAGE, KALIHI.

Established 1909.

Mother Mary Lawrence in charge.

RED CROSS SOCIETY.

Organized Sept. 2, 1907.

President	S. B. Dole
Vice-President	Mrs. B. F. Dillingham
Secretary	H. M. von Holt
Treasurer	C. H. Cooke
Auditor	J. R. Galt

HOSPITAL FLOWER MISSION.

President	Mrs. E. W. Jordan
Vice-President	Mrs. A. F. Judd
Secretary	Mrs. G. F. Davies
Treasurer	Mrs. Allen Bottomley
Auditor	E. W. Jordan

OAHU CEMETERY ASSOCIATION.

President	A. S. Cleghorn
Vice-President	F. J. Lowrey
Secretary and Treasurer	J. R. Galt

ANTI-SALOON LEAGUE OF HONOLULU, T. H.

Organized March 4, 1901.

President	Rev. J. W. Wadman
Vice-President	Rev. W. D. Westervelt
Vice-Pres. Honorary	Mrs. J. M. Whitney
Secretary	L. A. Dickey
Treasurer	G. J. Waller

PACIFIC CLUB.

Organized 1852. Premises on Alakea Street, two doors below Beretania.

President	A. S. Cleghorn
Vice-President	F. M. Swanzy
Secretary	Geo. C. Potter
Treasurer	A. W. T. Bottomley

Governors—A. A. Wilder, C. S. Holloway, E. J. Spalding, Geo. Rodiek, with the above officers, comprise the Board.

UNIVERSITY CLUB.

Organized 1905.

President	Hon. S. M. Ballou
Vice-President	A. Gartley
Secretary	
Treasurer	D. W. Anderson
Auditor	A. J. Campbell

COMMERCIAL CLUB OF HONOLULU.

Organized Aug. 30, 1906.

President	E. C. Brown
Vice-President	F. W. Macfarlane
Secretary	J. L. McLean
Treasurer	F. B. Damon

SCOTTISH THISTLE CLUB.

Organized April 27, 1891.

Chief .... Jas. H. Fiddes
Chieftain .... John Walker
Secretary .... J. C. McGill
Treasurer .... W. C. Shields
Master-at-Arms .... D. P. Gray
Club Rooms, 11 and 12 Young Building.
Meetings 2nd and 4th Fridays, 7:30 p. m.

BUCKEYE CLUB.

Organized 1904.

President .... Rev. W. D. Westervelt
Vice-President .... Mrs. W. C. Weedon
Sec. and Treas......... Mrs. C. E. Livingston

HONOLULU SYMPHONY SOCIETY.

President .... D. P. R. Isenberg
Vice-President .... H. F. Wichman
Secretary .... G. J. Boisse
Treasurer .... J. Lightfoot

HONOLULU CHESS CLUB.

Organized ....

President .... S. M. Ballou
Secretary and Treasurer........ A. A. Hobson
Membership Committee—H. E. Cooper, J. Rosenstein, Alex. G. Hawes Jr.

COUNTRY CLUB.

Organized 1906.

President .... W. F. Dillingham
1st Vice-President.............. J. P. Cooke
2nd Vice-Pres.............. E. A. Mott-Smith
Secretary .... H. C. Carter
Treasurer .... J. O. Young
Auditor .... W. Jamison

HAWAII YACHT CLUB.

Organized Oct., 1901.

Commodore .... C. T. Wilder
Vice-Commodore .... Jas. Jaeger
Secretary and Treasurer........ A. W. Neely
Measurer .... O. L. Sorenson
Captain .... H. D. Bowen
Regatta Com.—C. S. Crane, G. C. Beckley, J. N. Densham.
Directors—R. L. Scott, R. B. Rietow, T. V. King, E. L. Kruse, F. L. Miller.

MYRTLE BOAT CLUB.

Organized Feb. 5, 1883.

President .... T. V. King
Vice-President .... A. F. Ewart
Secretary .... R. B. Rietow
Treasurer .... I, Spalding
Captain .... W. Lyle
Trustees—H. F. Brown, G. Cowan, P. Schmidt.

HEALANI YACHT AND BOAT CLUB.

Incorporated Dec., 1894.

President .... W. L. Heilbron
Vice-President................ A. T. Longley
Secretary .... J. B. Lightfoot
Treasurer .... Geo. Gall
Captain .... D. L. Conklin
Commodore .... J. N. Densham
Vice-Commodore................ E. S. Kruse
Auditor .... H. Lempke

OAHU COLLEGE.

President—Arthur F. Griffiths, A. B., History and Economics (absent on leave).
John S. Reed—Acting President.
Wilbur J. MacNeil—Chemistry and Natural Sciences.
David L. Oleson—Mathematics.
Susan G. Clark—Latin and Greek.
C. S. Schmutzler—German.
C. W. Kitt, Marion L. Green—Commercial Department.
Harold S. Clark— ....
Ada M. Arthur—French.
Antoinette J. Foster—English.
Charlotte P. Dodge—Science, Mathematics and History.
Ruth S. Smith, Mrs. E. Mackall—Voice.
Elinore Cowan—Oral Expression.
Gertrude K. Brown, Caroline Sheffield—Instructors in Piano.
Margaret E. Clarke—Organ and Piano.
D. Howard Hitchcock—Art Drawing.
Mrs. Bernice Ross—Instructor on Violin.
Elizabeth J. Gillis—Stenog. and Typewriter.
Mrs. Maud Taylor, Adelaide Scott, Mrs. C. W. Kitt—Matrons.
Ernest J. Reece—Librarian.
Edith C. Lawrence, Doris E. Girdler—Assistant Librarians.
Jona. Shaw—Business Manager.
Frank Barwick—Supt. of Grounds.
H. G. Wooten—Engineer.
Sila Pratt—Office Secretary.

PUNAHOU PREPARATORY.

Chas. T. Pitts—Principal.
Haide Glasscock—First Grade.
Mary Persis Winne—Second Grade.
Mrs. Elizabeth A. Turner—Third Grade.
Florence N. Carter—Fourth Grade.
Mary G. Borden—Fifth Grade.
Anna F. Johnson—Sixth Grade.
Francis R. Nowell, Ada M. Stephens, M. Harriett Williamson—Seventh Grade.
Ray M. Sheldon—Eighth Grade.
Mrs. E. B. MacNeil, Miss Irene Fisher—Special.

REGENTS COLLEGE OF HAWAII.

H. E. Cooper..................... President
C. H. Cooke..................... Treasurer
A. Gartley, R. S. Hosmer, C. M. Cooke.

Library of Hawaii.

W. L. Whitney, Chairman; F. C. Atherton, Treasurer; W. H. Babbitt.

College of Hawaii Faculty.

John W. Gilmore, M.S.A.
President, Professor of Rural Economy and Agronomy.
Willis T. Pope, B.S.
Professor of Botany and Horticulture.
John S. Donaghho, B.A.
Professor of Mathematics.
John M. Young, M.E., M.M.E.
Professor of Engineering, and Engineer for the College.
Valentin Buehner, B.S.
Asst. Professor of German and French.
Frank T. Dillingham, B.S.
Professor of Chemistry.
Briggs E. Porter, B.S.A.
Professor of Animal Husbandry.
Wm. Alanson Bryan, B.S.
Professor of Zoology.
Miss Mildred M. Yoder, B.S.
Instructor in English.
Arthur R. Keller,
Professor of Civil Engineering.
Raymond C. Severance, B.S.
Instructor in Physics.
Agnes Hunt, B.S.
Instructor in Domestic Science.
Minnie E. Chipman,
Asst. Professor Ceramics.
Carrie P. Green,
Librarian.

KAWAIAHAO GIRLS' SEMINARY.

Miss Mabel E. Bosher—Principal.
Assistants—Misses Lucy Tappan, Mary F. Kinney, Ethel Hamilton, Jesse S. McCormick, Beatrice Tarbaugh.
Teacher of Music—Miss K. Reynolds.
Sewing—Mrs. F. Burt; Mrs. A. Haughton, Assistant.
Nurse—Miss L. Worthington.
Housekeeper—Miss May Worthington.
General Assistant—Miss Esther Kalino.

THE KAMEHAMEHA SCHOOLS.

Officers of Administration

Perley L. Horne—President.
Uldrick Thompson—Vice-Principal.
John Lloyd Hopwood—Chaplain.
Clifford E. Livingston—Registrar and Business Agent.
E. C. Waterhouse, M. D.—Physician.
Ida M. Pope—Principal Girls' School.
Alice E. Knapp—Preparatory Department School for Boys.

FACULTIES.

School for Boys' Manual Department.

Perley L. Horne—President.
Uldrick Thompson—Vice-Prin. and Science.
David Kanuha—Tailoring.
Geo. Paty—Carpentry.
Albert Parsons—Agriculture.
C. G. Livingston—Mathematics, Music.
John Lloyd Hopwood—History, Civics, Economics.
John Mingel—Forging ,Engineer.
Minnie Reed—Geography, Reading.
Clifford B. Thompson—Asst. in Agriculture.
S. Livingston, Miss Bradley, D. S. K. Pahu, W. A. Gill, Miss Armstrong, S. G. Bartlett, J. S. Sharp, N. G. Smith.
Mrs. Alice M. Bradstreet—Matron.
Adolph Hottendorf—Printing.

Preparatory Department.

Alice E. Knapp—Principal.
Estelle Roe—Fifth and Sixth Grades.
Sarah A. Smith—First and Second Grades.
Maude Post—Third and Fourth Grades.
Nevado Moore—Class Teacher.
Margaret Medill—Matron.
Assistants—Miss Eliza Kahele, Nora Kahaleole, Miss Kamakawiwoole.

School for Girls.

Ida M. Pope—Principal.
Frances A. Lemmon—Geography, Arithmetic.
Helen Lathrop—Music.
Misses McCracken, Cross, Reid.
Catherine Berger—Science.
Carrie Church—Domestic Art.
Assistants—Misses Robertson, Iokia, Williams, Irene Silva, Kaipo Senna, Ah Kue.

HONOLULU (STEAM) FIRE DEPARTMENT.

Originally organized 1851, and conducted as volunteers till March 1, 1893, when it was changed to a paid department.

Chief Engineer—Chas. Thurston.
Asst. Engineer—Augustus Deering.
Honolulu Engine No. 1—Location, Central Station, cor. Fort and Beretania streets.
Mechanic Engine No. 2—Location, Central Station, cor. Fort and Beretania streets.
Chemical Apparatus No. 3—Location, Central Station, cor Fort and Beretania streets.
Protection Hook and Ladder Co. No. 1—Location, Central Station, cor. Fort and Beretania streets.
Engine Co. No. 4—Location cor. Wilder avenue and Piikoi street.
Engine Co. No. 5—Location King street, near Reform School.

FIRE ALARM SIGNALS.

12.	Cor. King and Fort.
13.	Alakea and Beretania.
14.	Bethel and Merchant.
15.	Nuuanu and Queen.
16.	Nuuanu and King.
17.	Nuuanu and Hotel.
18.	Nuuanu and Beretania.
21.	Fort and Hotel.
23.	Alakea and Hotel.
24.	Alakea and Merchant.
25.	Punchbowl and King.
26.	Punchbowl and Queen.
27.	South and Queen.
28.	Kawaiahao and Cooke.
29.	Queen and Kamani.
31.	Fort and Queen.
32.	Fort and Allen.
34.	Allen and Alakea.
35.	Richards and Queen.
36.	King and Mililani.
37.	Ala Moana and Punchbowl.
41.	King and River.
42.	Kekaulike and Hotel.

43. Smith and Pauahi.
45. Beretania and River.
46. Maunakea and King.
47. Railroad Wharf.
48. Iwilei Road, opp. Fertilizer Works.
49. Cannery, off Iwilei Road.
51. Iwilei Road, opp. Oahu Jail.
52. Beretania and King.
53. Liliha and King.
54. King and Dowsett Lane.
56. Insane Asylum Road and School St.
47. King and Waipilopilo Lane.
58. King and Kalihi Road.
59. Gulick Ave. and Beckley St.
61. Vineyard and River.
62. Vineyard and Nuuanu.
63. Vineyard and Fort.
64. Vineyard and Punchbowl.
65. Beretania and Punchbowl.
67. Alapai and Beretania.
71. Liliha and Vineyard.
72. Liliha and School.
73. Liliha and Judd.
74. Liliha and Wyllie.
75. Nuuanu and Judd.
76. Nuuanu and Pauoa Road.
78. Nuuanu and School.
81. Alapai and King.
82. Victoria and King.
83. Kapiolani and Beretania.
84. Kapiolani and Green.
85. Pensacola and Lunalilo.
86. Pensacola and Beretania.
87. Piikoi and King.
91. Thurston Ave. opp. Magazine.
92. Pensacola and Wilder.
93. Lunalilo, opp. Kewalo.
94. Keeaumoku and Wilder.
95. Kewalo and Heulu.
96. Makiki and Dominis.
97. College and Dominis.
123. Makiki and Lunalilo.
124. Keeaumoku and Kinau.
125. Keeaumoku and King.
126. Punahou, opp. Bingham.
127. Alexander and Beretania.
128. King and McCully.
129. Punahou and King.
132. Kalakaua Av. opp. Sunny South .
134. Kalakaua Av. and Kalia Road.
135. Kalia Road and Lewers' Road.
136. Kalakaua Av. opp. Moana Hotel.
137. Kalakaua Av. opp. Race Track.
142. Wilder Av. and Alexander St.
143. Manoa Rd. and Kamehameha Av.
152. Luso and Lishman Sts.
153. Emma and School.
154. Fort and School.
156. Luso St. near Pauoa Road.
162. King and Kamehameha IV Road.
163. Middle and Rose.

PRINCIPAL PUBLICATIONS.

The Hawaiian Gazette, issued semi-weekly by the Hawaiian Gazette Co., Ltd., on Tuesdays and Fridays. R. O. Matheson, Editor.

Sunday Advertiser, issued every Sunday morning by the Hawaiian Gazette Co., Ltd. R. O. Matheson, Editor.

The Daily Pacific Commercial Advertiser, issued by the Hawaiian Gazette Co. every morning (except Sunday). R. O. Matheson, Editor.

The Daily Bulletin, issued every evening (except Sundays), by the Bulletin Pub. Co. W. R. Farrington, Editor. Weekly editions issued on Tuesdays.

The Hawaiian Star, issued every evening (except Sundays), by the Hawaiian Star Newspaper Association. Geo. F. Henshaw, Manager. Semi-Weekly issued on Mondays and Thursdays.

The Guide, issued every Tuesday and Friday morning by the Guide Pub. Co.

The Friend, Organ of the Hawaiian Board, issued on the first of each month. Rev. Doremus Scudder, Editor.

The Hawaiian Church Chronicle, issued on the first Saturday of every month. Rt. Rev. H. B. Restarick, Editor.

The Paradise of the Pacific, issued monthly. W. M. Langton, Editor and Publisher.

The Planters' Monthly, issued on the 15th of each month. L. A. Thurston, Editor.

The Hawaiian Forester and Agriculturist, issued monthly under direction of Board of Com. Agr. and Forestry. L. G. Blackman, Editor.

The Honolulu Times, issued monthly. Anna M. Prescott, Editor and Publisher.

The Kuokoa (native), weekly, issued every Friday morning by the Hawaiian Gazette Co., Ltd. Solomon Hanohano, Editor.

Aloha Aina (native) issued every Saturday. J. M. Poepoe, Editor.

Kuokoa Home Rula (native), issued each Friday. C. K. Notley, Editor.

O. Luso (Portuguese), issued weekly on Saturdays. J. S. Ramos, Editor.

A Liberdade, Portuguese weekly, published on Thursdays. .... Editor.

Sun Chung Kwock Bo, tri-weekly, Chinese.

Hawaii Shinpo, issued daily in Japanese. S. Sheba, Proprietor.

Hilo Tribune, issued weekly on Saturdays by the Tribune Pub. Co., Hilo. H. W. Kinney, Editor.

The Hawaii Herald, issued weekly at Hilo on Thursdays by the Herald Pub. Co. C. R. Buckland, Editor.

The Maui News, issued weekly at Wailuku, Maui. H. M. Coke, Editor.

The Garden Island, issued weekly at Lihue, Kauai. C. S. Dole, Editor.

THE HAWAIIAN ANNUAL, issued the latter part of December for the following year. Thos. G. Thrum, Editor and Publisher.

HONOLULU LODGES, ETC.

Oceanic Lodge No. 371, F. & A. M.: meets on the last Monday in each month in Masonic Hall.

Hawaiian Lodge, No. 21, F. & A. M.: meets in its Hall, Masonic Temple, corner Hotel and Alakea streets, on the first Monday in each month.

Honolulu Chapter, No. 1, R. A. M.: meets in Masonic Hall on the third Thursday of each month.

Honolulu Commandery, No. 1, Knights Templar; meets in Masonic Hall on second Thursday of each month.

Mystic Shrine, Aloha Temple. No stated time of meeting. Meets at Masonic Hall.

Kamehameha Lodge of Perfection, No. 1, A. & A. S. R.; meets in Masonic Hall on the fourth Thursday of each month.

Nuuanu Chapter of Rose Croix, No. 1, A. & A. S. R.; meets in Masonic Hall on first Thursday in the month.

Alexander Liholiho Council, No. 1, of Kadosh; meets on the third Monday of alternate months from February.

Pacific Lodge, No. 822, A. F. & A. M.; meets at Masonic Hall every second Monday of the month.

Leahi Chapter, No. 2, Order of the Eastern Star; meets on third Monday of each month in Masonic Hall.

Lei Aloha Chapter, No. 3, Order of the Eastern Star; meets on second Saturday of each month in Masonic Temple.

Excelsior Lodge, No. 1, I. O. O. F.; meets at the hall in Odd Fellows' Building, on Fort St., every Tuesday evening.

Harmony Lodge, No. 2, I. O. O. F.; meets each Monday evening in Odd Fellows' Building, Fort street.

Pacific Degree Lodge, No. 1, Daughters of Rebekah; meets in Odd Fellows' Building, Fort street, second and fourth Thursdays of each month.

Olive Branch Rebekah, No. 2, I. O. O. F.; meets first and third Thursdays each month in Odd Fellows' Building.

Polynesian Encampment, No. 1, I. O. O. F.; meets in Odd Fellows' Building, Fort street, first and third Fridays of each month.

Canton Oahu, No. 1, P. M., I. O. O. F.; meets second Friday each month in Odd Fellows' Hall, Fort St.

Oahu Lodge, No. 1, K. of P.; meets every Thursday evening at Pythian Hall, cor. Beretania and Fort streets.

Mystic Lodge, No. 2, K. of P.; meets every Wednesday evening at Pythian Hall, cor. Beretania and Fort streets.

Section N. 225—Endowment Rank, K. of P.; meets on the second Saturday of January, July and December in Pythian Hall,

Honolulu Temple, No. 1, Rathbone Sisters; meets in Pythian Hall, first and third Monday evenings of each month.

Wm. McKinley Lodge, No. 8, K. of P.; meets every Saturday evening in Pythian Hall.

Hawaiian Council, No. 689, American Legion of Honor; meets on second and fourth Friday evening of each month in Harmony Hall.

Oceanic Council, No. 777, American Legion of Honor, meets on the first and third Tuesdays of each month.

Hawaiian Tribe, No. 1, Improved Order of Red Men; meets on first and third Thursdays of each month at K. of P. Hall.

Court Lunalilo, No. 6600, A. O. of Foresters; meets at K. of P. Hall on first and third Fridays of each month.

Court Camoes No. 8110, A. O. F.; meets second and fourth Tuesday evening of month in San Antonio Hall.

Geo. W. de Long Post, No. 45, G. A. R.; meets the second Tuesday of each month at Odd Fellows' Building, Fort street.

Theo. Roosevelt Camp, No. 1, Dept. of Hawaii U. S. W. V.; second and fourth Saturdays, Waverly Hall, Bethel street.

Geo. C. Wiltse Camp, Sons of Veterans; meets on third Tuesday of each month in San Antonio Hall.

Capt. Cook Lodge, No. 353, Order Sons of St. George; meets at Harmony Hall every Monday evening.

Court Hawaii, No. 3769, Independent Order of Foresters, meets third Monday of each month.

Damien Council, Young Men's Institute; meets second and fourth Wednesdays of each month at Catholic Mission Hall.

Honolulu Lodge, B. P. O. Elks, 616; meets every Friday evening in the Elks' Building, King street near Fort.

Honolulu Aerie, No. 140, Fraternal Order of Eagles, meets fourth Wednesday each month in Pythian Hall.

American Association of Masters and Pilots of Steam Vessels, Honolulu Harbor, No. 34; meets first and third Sundays of each month at 7 p. m. in Odd Fellows' Hall.

Marine Engineers' Beneficial Association, No. 100; meets every second and fourth Monday nights at K. of P. Hall.

Kamehameha Lodge (native); meets last Thursday of each month in Odd Fellows' Hall.

Kauikeaouli Lodge, No. 1 (native); meets on first and third Fridays each month in St. Antonio Hall.

PLACES OF WORSHIP.

Central Union Church, Congregational (Independent), corner Beretania and Richards streets; Rev. Doremus Scudder, D. D., pastor; Rev. A. A. Ebersole, assistant pastor. Services every Sunday at 11 a. m. and 7:30 p. m. Sunday school meets one hour before morning service. Prayer meeting Wednesday evenings at 7:30.

Palama Chapel, J. A. Rath, Superintendent. Sunday school at 9:30 a. m. Gospel services at 7:30 p. m.

Methodist Episcopal Church, corner Beretania and Miller streets. Rev. Dr. J. T. Jones, pastor. Sunday services at 11 a. m. and 7:30 p. m. Sunday school meets at 10 a. m. Prayer meeting Wednesdays at 7:30 p. m.

The Christian Church, A. C. McKeever, pastor. Rev. Chas. C. Wilson in charge of Mission work. Sunday services at 11 a. m. and 7:30 p. m. at their house of worship, Alakea street, near King. Sunday school meets at 9:45 a. m.

Salvation Army, services held nightly at hall, Nuuanu street, with Sunday services at the usual hour.

Roman Catholic Church, Fort street, near Beretania; Rt. Rev. Libert Boeynaems, Bishop of Zeugma. Services every Sunday at 10 a. m. and 4:30 p. m. Low mass every day at 6 and 7 a. m. High mass Sundays and Saints' days at 10 a. m.

St. Andrew's Cathedral, Protestant Episcopal; entrance from Emma street, near Beretania. Rt. Rev. Henry Bond Restarick, Bishop of the Missionary District of Honolulu; Rev. E. T. Simpson. Holy Communion, 7; Sunday school, 10; morning prayer, litany and sermon, 11; Hawaiian service, 3:30; evening prayer and sermon, 7:30.

Chinese Congregation. Rev. Kong Yim Tet, Curate. Services on Sunday at 11 a. m. and 7:30 p. m. Evening prayer every Wednesday at 7 p. m.

St. Clement's Chapel, Punahou. Services on Sundays. Holy Communion, 7 a. m. Morning prayer, 11 a. m; evening prayer, 7:30 p. m. Rev. John Usborne, rector.

Christian Chinese Church, Fort street; Rev. E. W. Thwing, acting pastor. Services every Sunday at 10:30 a. m. and 7:30 p. m. Prayer meeting Wednesdays at 7:30 p. m.

German Lutheran Church, Beretania St.; Rev. W. Felmy, pastor. Services on Sunday at 11 a. m.; Sunday school at 10 a. m.

Portuguese (Protestant) Mission; Rev. A. V. Soares, pastor. Services every Sabbath at the usual hour. Sunday school at 3 p. m. Chapel situated corner of Punchbowl and Miller streets.

Reorganized Church of Jesus Christ, G. J. Waller, pastor. Services in new chapel on King street near Thomas Square; Sunday school at 10 a. m.; preaching in Hawaiian at 11 a. m.; in English at 7:30 p. m.

Seventh Day Adventists. S. D. M. Williams, pastor. Chapel 767 Kinau street. Sabbath school Saturdays at 10 a. m.; preaching at 11. Wednesday prayer and missionary meeting at 7:30 p. m.

Japanese Union Church (connected with Hawaiian Board Missions); Rev. T. Hori, pastor. Hold services at the Lyceum at 10 a. m. Preaching at 11 a. m. and 7:30 p. m. Sunday services. Prayer and praise meeting Wednesdays at 7 p. m.

Japanese Methodist Church, Rev. C. Nakamura, pastor. Hold services in chapel on River street, near St. Louis College.

Japanese Church, cor. Kinau and Pensacola Sts., Rev. T. Okumura, pastor; hold regular services at the usual hours.

Bishop Memorial Chapel, Kamehameha Schools, Rev. J. L. Hopwood, Chaplain. Morning services at 11.

COUNTY OFFICIALS.

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Clerk	D. Kalauokalani, Jr.
Auditor	Jas. Bicknell
Treasurer	R. H. Trent
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Supervisors—William Ahia, R. W. Aylett, Andrew E. Cox, Wm. A. Kane, Daniel Logan, W. H. McLellan, J. C. Quinn.

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Koolaupoko, Frank Pahia.
Waianae, W. R. Gilliland.
Waialua, Oscar P. Cox.
Ewa, Jno. Fernandez.

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Chief Engineer Road Dept.—H. G. Wooten.

Chief Engineer Fire Dept.—Chas. H. Thurston.

Asst. Engineer Fire Dept.—Aug. G. Deering.

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Prosecuting Attorney, Police Court—A. M. Brown.

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Supt. Kapiolani Park—Alex. Young.

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Waianae, Fred Meyer.
Waialua, Chas. Kukea.
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Koolaupoko, J. K. Paele.
Waimanalo, Geo. Chalmers.

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Auditor	Charles Wilcox
Treasurer	L. M. Baldwin
Clerk	W. F. Kaae

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Lahaina, Geo. Kauhi.
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Wailuku, C. Crowell.
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Hana, L. L. Joseph.
Molokai, Ed. K. Devauchelle.

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Treasurer	T. K. Lalakea

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Hilo, S. L. Desha, J. D. Lewis.
Puna, N. K. Lyman.
Hamakua, A. Fernandez.

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North Hilo, James Mattoon.
Hamakua, H. S. Overend.
Puna, S. H. Haaheo.
North Kohala, J. G. Lewis.
Kau, John K. Kekaula.
S. Kohala, W. S. Lindsay.
S. Kona, S. Lazaro.
N. Kona, J. N. Koomoa.

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Auditor	G. E. H. Baker
Clerk	J. M. Kaneakua
Attorney	S .K. Kaeo
Treasurer	A. H. Rice

Supervisors—Francis Gay.
Koloa, W. D. McBryde.
Lihue, H. D. Wishard.
Kawaihau, J. Opio.
Hanalei, Geo. Huddy.

Deputy Sheriffs—Lihue, Wm. Ellis.
Waimea, W. O. Crowell.
Koloa, Henry Blake.
Kawaihau, S. W. Meheula.
Hanalei, James K. Lota.

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W. T. Rawlins..........Asst. U. S. Attorney
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H. C. Bruns......................
......Chief Office Deputy U. S. Marshal
H. H. Holt......Office Deputy U. S. Marshal
R. Irwin........Office Deputy, U. S. Marshal
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.................U. S. Commissioners
W. W. Thayer........Referee in Bankruptcy
Chas. Furneaux.....U. S. Commissioner, Hilo
Wm. H. Beers...............Referee, Hilo

Regular Terms:—At Honolulu on the second Monday in April and October, and at Hilo on the last Wednesday in January of each year.

Special Terms:—May be held at such times and places in the district as the Judge may deem expedient.

Miss C. F. Sackett.........Clerk, U. S. Atty
J. A. Combs........U. S. Court Stenographer
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Hawaii Experiment Station.

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U. S. WEATHER BUREAU.

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Anthony Richley, F. C. Palmer.........
Superintendents of Construction.
Wesley G. Clark...............Chief Clerk
Miss Mabel McAndrews...............Clerk
Fred. W. S. Blanchard...........Draftsman

WAR DEPARTMENT.

U. S. Army.

Engineer Department.

Major E. Eveleth Winslow, Corps of Engineers, U. S. Army, in charge of works for defense of Honolulu and Pearl Harbor, and of the improvement of Pearl, Honolulu and Hilo Harbors, Hawaii.
S. F. Burbank, Richard Quinn, Assistant Engineers.
S. A. Anthony..................Chief Clerk
A. C. Wheeler...............Jun. Engineer
M. H. Webb, S. H. Ware, J. W. Caldwell, F. C. Betters................Overseers
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Capt. Alfred B. Putnam.......................Corps of Engineers, U. S. A.
1st Lieut. R. T. Ward..........................Corps of Engineers, U. S. A.
2nd Lieut. Jas. A. O'Connor.....................Corps of Engineers, U. S. A.
2nd Lieut. Lewis A. Watkin.....................Corps of Engineers, U. S. A.
1st Lieut. John P. Kelley...Surgeon, U. S. A.

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Captain W. H. H. Chapman, 20th Infantry.
" C. W. Exton, 20th Infantry.
" S. H. Wadhams, Medical Dept., U. S.
" Arthur M. Shipp, 20th Infantry.
1st Lieut. J. S. McCleery, 20th Infantry.
" A. M. Pardee, 20th Infantry.
" H. Du R. Phelan, 20th Infantry.
2nd Lieut. A. W. Chilton, 20th Infantry.
" G. C. Bowen, 20th Infantry.

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George K. Hunter, Lieutenant Colonel.
Daniel H. Boughton, Major, D.S. at Army War College, Washington, D. C.
Harry C. Benson, Major, D.S. with 2nd Squadron, Fort Yellowstone, Wyo.
Fred. W. Foster, Major, absent on leave.
Edward A. Sturges, Captain and Adjutant; Post Adjutant.
Clarence R. Day, Captain and Quartermaster; Post Quartermaster.
Severyn H. Middagh, Regimental Sergeant Major.
John Bem, Regimental Quartermaster Sergeant.
Wm. F. Armstrong, Regimental Commissary Sergeant.
Peter Biehl, Louis Sinn, Color Sergeants.
Jos. H. Barnard, 1st Lt. and Sqdrn. Adjt., Ord., Eng. and Signal Officer.
Chas. F. Stewart, 2nd Lt., Sqdrn. Q. M. and Comsy., Officer in charge Prisoners and Asst. to Q. M.
Herbert A. Jones, Sgt. Maj. 1st Squadron.
Walter L. Shearman, Sgt. Maj. 3rd Squadron.

Band.

Edw. A. Sturges, Capt. and Adjt., commanding Band, Post and Reg. Non-Commissioned Staff.

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Chief Boatswain B. H. Shepley, U. S. N., Captain of the Yard and Commanding Officer U. S. S. Iroquois.
Civil Engineer C. W. Parks, U. S. N., in charge of Pearl Harbor Naval Station work.
Surgeon Cary D. Langhorne, U. S. N.
P. A. Paymaster John R. Hornberger, U. S. N., Pay Officer and General Storekeeper.
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Theo. H. Scharf, Carpenter, U. S. N.
Pay Clerk John W. Caum, U. S. N.
Pay Clerk Thos. Dunn, U. S. N.
Geo. Roenitz, Chief Clerk.

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Capt. Arthur T. Marix, Post Q. M. and Commissary.
1st Lieut. R. B. Farquharson, Adjt. and Post Exchange Officer.
Capt. Frank F. Robards, Company A.
1st Lieut. F. D. Kilgore, Company A.
Capt. W. W. Low, Company B.
1st Lieut. C. Ancrum, Company B.
1st Lieut. W. T. Burchfield, Company B.
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1st Lieut. L. Pinkston, Company C.
Capt. F. A. Hamsey, Company D.
1st Lieut. B. A. Lewis, consigned temporarily to Company D.
1st Lieut. L. S. Willis, Company D.

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Card Ramus, P. A. Surgeon U. S. P. H. & M. H. S.
A. N. Sinclair, Acting Assistant Surgeon U. S. M. H. S.
Wm. T. James, Acting Assistant Surgeon U. S. M. H. S.
J. E. Beck, Pharmacist, U. S. M. H. S.
Jno. G. Grace, Acting Assistant Surgeon U. S. M. H. S., Hilo, Hawaii.
Jno. Weddick, Acting Assistant Surgeon U. S. M. H. S., Kahului, Maui.
R. H. Dinegar, Acting Assistant Surgeon U. S. M. H. S., Kihei, Maui.
Franklin Burt, Acting Assistant Surgeon, U. S. M. H. S., Lahaina, Maui.
A. H. Waterhouse, Acting Assistant Surgeon U. S. M. H. S., Koloa, Kauai.
B. D. Bond, Acting Assistant Surgeon U. S. M. H. S., Mahukona, Hawaii.

LEPROSY INVESTIGATION STATION

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Donald H. Currie, P. A. Surgeon....Director
Dr. W. K. Brinckerhoff.......Asst. Director
W. T. Holman.........Acting Asst. Surgeon
F. L. Gibson..................Pharmacist

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